Technical Report 1312

Assessing the Tailored Adaptive Personality Assessment System (TAPAS) as an MOS Qualification Instrument

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14. ABSTRACT (Maximum 200 words):
This report examines whether the Tailored Adaptive Personality Assessment System (TAPAS) may be useful for selecting and classifying recruits into Military Occupational Specialties (MOS) and describes the two broad approaches that were taken to evaluate the measure for these purposes. TAPAS data for this research were collected from Army applicants at the Military Entrance Processing Stations (MEPS) between May 2009 and June 2011. In addition, criterion data were collected in the *Tier One Performance Screen* (TOPS) program. The total sample size for this research was 151,625. With this data, we first examined the validity of TAPAS scales for predicting outcomes in four high density MOS including 11B, 31B, 68W, and 88M. Next, we examined whether the TAPAS scales could be used to differentiate high performers in each MOS from those that would perform better in a different occupation. Using composites of the TAPAS scales, results indicated that some individuals might perform better in an MOS other than the one they were assigned to. Therefore, TAPAS may be useful as a supplement to the current procedures for MOS qualification and classification.

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ASSESSING THE TAILORED ADAPTIVE PERSONALITY ASSESSMENT SYSTEM (TAPAS) AS AN MOS QUALIFICATION INSTRUMENT

EXECUTIVE SUMMARY

Research Requirement:

The Tailored Adaptive Personality Assessment System (TAPAS) was developed by Drasgow Consulting Group (DCG) under the Army's Small Business Innovation Research (SBIR) grant program. At the heart of the assessment system is a trait taxonomy comprising 21 facets of the Big Five personality factors plus Physical Conditioning, which has been shown to be important for military applications (Chernyshenko, & Stark, 2006; Chernyshenko, Stark, & Drasgow, 2010; Drasgow, Chernyshenko, & Stark, 2008). TAPAS tests utilize a multidimensional pairwise preference (MDPP) format that is designed to be resistant to faking in a way that is similar to the Army's Assessment of Individual Motivation (AIM; White & Young, 1998) inventory. However, the MDPP format was chosen because it provides a more mathematically tractable alternative for constructing and scoring adaptive tests using item response theory (Stark, Chernyshenko, & Drasgow, 2005; Stark, Chernyshenko, & Drasgow, 2012; Stark, Chernyshenko, Drasgow, & White, 2012).

In May 2009, the U.S. Army approved the initial operational testing and evaluation (IOT&E) of the TAPAS for use with Army applicants at the Military Entrance Processing Stations (MEPS). Dimensions comprising the MEPS version of TAPAS were selected with the long term goal of creating personality composites that might be used to improve selection and classification decisions. The primary objective of the TAPAS-MOS Qualification effort was to evaluate the effectiveness of the TAPAS as a tool for selecting and classifying Soldiers into military occupational specialties (MOS). Past research has provided initial validity evidence for using TAPAS for applicant accessions (Knapp & Heffner, 2010) and for MOS classification (Knapp, Owens, Allen, 2011). Thus, the goal of the present research was to expand these efforts using larger samples and a newer version of the TAPAS administered in a high-stakes applicant setting. The central activity in this effort involved analyzing TAPAS and criterion data, including job knowledge tests, performance evaluations, attitude measures, and attrition data, to determine whether Soldiers could be effectively classified into high density MOS using TAPAS. The key questions were whether using TAPAS scales could improve MOS screening and provide improved estimates of performance potential.

Procedure:

The data for this research included TAPAS and criterion data collected through June 2011 in the *Tier One Performance Screen* (TOPS; Knapp, & Heffner, in press) program. The data consisted of a total of 151,625 respondents. From this sample, we examined relationships between TAPAS scales and various criteria in the four largest MOS: Infantry (11B), Combat Medics (68W), Military Police (31B), and Motor Transport Operators (88M).

Due to the large number of criteria measured, we developed a reduced set of criteria for our analyses by combining outcomes into criterion composites. The goal of this step was to create a small number of criterion composites that could be used as dependent variables for

developing TAPAS classification composites. Based on previous work (Allen, Cheng, Putka, Hunter, & White, 2010; Campbell & Knapp, 2001), we categorized the criteria in the TOPS dataset into Can-Do and Will-Do composites. However, because attrition represents a substantial cost for the Army, we also examined this variable as a separate outcome. Thus, three criterion composites were created for our analyses. Can-do performance was comprised of scores on the Army-wide and MOS-specific job knowledge tests. Will-do performance consisted of performance ratings (Army-wide and MOS-specific ratings), the ALQ scales (e.g., adjustment, commitment, reenlistment intentions), Army Physical Fitness Test (APFT) scores, training achievement, training failure, and disciplinary incidents. Given their importance to the Army, APFT scores and disciplinary incidents were double weighted whereas the other components of this criterion composite were unit weighted. Attrition refers to 6-month attrition from the Army.

Using these criteria, two sets of analyses were conducted to evaluate TAPAS for MOS qualification and classification. For the first set of analyses, we used correlation and regression analysis to examine the predictive validity of the TAPAS facets and to develop TAPAS composites for predicting the Can-Do, Will-Do, and Attrition criteria in each MOS. The second set of analyses examined whether using TAPAS could improve the assignment of Soldiers to MOS. From our analyses of predictive accuracy, we obtained standardized regression equations for predicting the criterion variables in each MOS from the composites of TAPAS scales. Using predicted performance scores for each individual, we studied whether placement into an MOS on the basis of TAPAS scores could yield increased performance, improved attitudes, and reduced attrition.

Findings:

TAPAS scales were useful predictors of can-do, will-do, and attrition outcomes. Across MOS, TAPAS composites were shown to have significant relationships with outcomes such as job knowledge test scores, APFT scores, disciplinary incidents, and 6-month attrition, among other criteria. In addition, preliminary results also indicated that the pattern of relationships among the TAPAS scales and criterion composites differed across MOS. Therefore, different TAPAS composites were required to predict performance in each MOS, suggesting that TAPAS may be useful for classification. In fact, our results indicated that many Army personnel may have performed better in a different MOS than the one they were assigned to. In each of the four MOS we examined, approximately 40% to 50% of individuals were predicted to perform substantially better in a different MOS. Although these findings are preliminary and do not consider other factors in the classification process (e.g., MOS availability, Soldier preference, MOS needs), these results do provide some initial evidence that the TAPAS may be useful for MOS classification. In addition, these findings are consistent with past research examining TAPAS as a classification tool (Knapp, Owens, & Allen, 2011).

Utilization and Dissemination of Findings:

Given the sample sizes in several of these occupations, the MOS-specific TAPAS composites are provided as preliminary tools for evaluating MOS qualification. Consequently, results should be confirmed when larger samples of criterion data have been collected and when more MOS are available for analysis. However, these preliminary results suggest that TAPAS composites can be useful as a supplement to the Army's current qualification and classification systems.

ASSESSING THE TAILORED ADAPTIVE PERSONALITY ASSESSMENT SYSTEM (TAPAS) AS AN MOS QUALIFICATION INSTRUMENT

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INTRODUCTION

BACKGROUND

The Tailored Adaptive Personality Assessment System (TAPAS) was developed by Drasgow Consulting Group (DCG) under the Army's Small Business Innovation Research (SBIR) grant program. At the heart of the assessment system is a trait taxonomy comprising 21 facets of the Big Five personality factors plus Physical Conditioning, which has been shown to be important for military applications (Chernyshenko, Stark, & Drasgow, 2010; Chernyshenko, Stark, Drasgow, & Roberts, 2007). TAPAS tests utilize a multidimensional pairwise preference (MDPP) format that is designed to be resistant to faking in a way that is similar to the Army's Assessment of Individual Motivation (AIM; White & Young, 1998) inventory. However, the MDPP format was chosen because it provides a more mathematically tractable alternative for constructing and scoring adaptive tests using item response theory (Stark, Chernyshenko, & Drasgow, 2005; Stark, Chernyshenko, Drasgow, & White, 2012).

When forming pairs for the MDPP format, TAPAS balances the two statements in terms of social desirability and extremity on the dimensions they assess. A difficult measurement issue was solved by adding a small number of unidimensional item pairs in with the multidimensional item pairs (i.e., the MDPP items), which are needed to identify the latent trait metric and yield normative scores using the MDPP format (Stark, 2002; Stark, Chernyshenko, & Drasgow, 2005). TAPAS scoring is then based on the MDPP item response theory (IRT) model originally proposed by Stark (2002). A series of equations are solved numerically to produce a vector of latent trait scores for each respondent as well as standard errors.

In May 2009, the U.S. Army approved the initial operational testing and evaluation (IOT&E) of the TAPAS for use with Army applicants at Military Entrance Processing Stations (MEPS). Dimensions comprising the TAPAS versions used in the MEPS were selected with the long term goal of creating personality composites that might be used to improve selection and classification decisions.

In collaboration with the Army Research Institute, DCG developed the three computerized forms of TAPAS implemented in the MEPS. These computer programs utilized a statement pool containing over 800 personality statements which was large enough to generate thousands of pairwise preference items tailored to the trait levels of individual applicants for enlistment. Statement parameters for this pool were estimated from data collected in large samples of new recruits from 2006 to 2008 (Drasgow, Stark, Chernyshenko, Nye, Hulin, & White, 2012).

The first TAPAS version was a 13-dimension computerized adaptive test (CAT) containing 104 pairwise preference items. This version is referred to as the TAPAS-13D-CAT. TAPAS-13D-CAT was administered from May 4, 2009 to July 10, 2009 to about 2,200 Army and Air Force recruits. In July 2009, TAPAS MEPS testing was expanded to 15 dimensions by adding the facets of Adjustment from the Emotional Stability domain and Self Control from the

Conscientiousness domain, and test length was increased to 120 items. In both cases, testing time was limited to 30 minutes.

Two 15-dimension TAPAS tests were created. One version was nonadaptive, so all examinees answered the same sequence of items; the other was adaptive, so each examinee answered items tailored to his/her trait level estimates. The TAPAS-15D-Static was administered from mid-July to mid-September of 2009 to all examinees, and thereafter continuously to smaller numbers of examinees at some MEPS. The adaptive version, referred to as TAPAS-15D-CAT, was introduced in September of 2009 and was administered to a large number of recruits until July 2011 when it was replaced by a newer TAPAS version based on a second item pool.

TAPAS INITIAL VALIDATION EFFORTS

In 2006, ARI initiated a longitudinal research project to examine the validity of non-cognitive measures for predicting Army outcomes. The goal of the *Validating Future Force Performance Measures* (Army Class) research program was to explore the use of several experimental measures for selection and MOS classification. The TAPAS was included in this effort and a version of the TAPAS was administered to new Soldiers in 2007 and 2008. New Soldiers completed a 12-dimension, 95-item nonadaptive (or static) version of TAPAS, called TAPAS-95s. TAPAS-95s was administered as a paper questionnaire that included an information sheet showing respondents a sample item and illustrating how to properly record their answers to the "questions" that followed. Respondents were specifically instructed to choose the statement in each pair that was "more like me" and that they must make a choice even if they found it difficult to do so. Item responses were scored using an updated version of Stark's (2002) computer program for MDPP trait estimation.

Criterion data were also collected for each individual in the Army Class database and results showed that TAPAS-95s provided significant incremental validity over the ASVAB for predicting attrition, end of training criteria, and in-unit performance (Knapp & Heffner, 2009; Knapp, Owens, Allen, 2011). In addition, this research also showed that the TAPAS provided non-trivial gains in classification efficiency over the ASVAB alone.

Additional predictive and construct-related validity evidence for TAPAS was collected during the U.S. Army's *Expanded Enlistment Eligibility Metrics* (EEEM) research project from 2007-2009 (Knapp & Heffner, 2010). The EEEM effort was conducted in conjunction with ARI's *Army Class* longitudinal validation. Overall, the TAPAS-95s showed evidence of construct and criterion validity. The Intellectual Efficiency and Curiosity dimensions, for example, showed moderate positive correlations with the Armed Forces Qualification Test (AFQT) and correlations of .35 with each other. This was expected, given that both facets tap the intellectance aspect of the Big Five factor, Openness to Experience. The same two traits exhibited similarly positive, but smaller, correlations with Tolerance, another facet of Openness reflecting comfortableness around others having different customs, values, or beliefs (Chernyshenko, Stark, Woo, & Conz, 2008). TAPAS-95s dimensions also showed incremental validity over AFQT in predicting several performance criteria. For example, when TAPAS trait scores were added into the regression analysis based on a sample of several hundred Soldiers, the multiple correlation increased by .26 for the prediction of physical fitness, by .16 for the

prediction of disciplinary incidents, and by .20 for the prediction of 6-month attrition (Allen, Cheng, Putka, Hunter, & White, 2010). None of these criteria were predicted well by AFQT alone (predictive validity estimates were consistently below .10).

In sum, the Army Class and EEEM research showed TAPAS to be a viable assessment tool with the potential to enhance new Soldier selection and classification decisions. Trait scores exhibited construct validity evidence with respect to other measures and criterion-related validity estimates were fairly high for outcomes not predicted well by AFQT. Moreover, scores also showed predictive validity for predicting a number of Army outcomes. Based on the results of this research and taking into consideration the unique advantages of TAPAS (e.g., flexibility and resistance to faking), the Army chose to examine the measure in an applicant environment.

INITIAL TAPAS COMPOSITES

As part of the validation analyses in the EEEM project, an initial Education Tier 1 performance screen was developed from the TAPAS-95s scales for the purpose of testing in an applicant setting (Allen et al., 2010). This was accomplished by (a) identifying key criteria of most interest to the Army, (b) categorizing these criteria into "can-do" and "will-do" performance, and (c) selecting composite scales corresponding to the can-do and will-do criteria, taking into account both theoretical rationale and empirical results. The result of this process was two composite scores.

1. Can-Do Composite: The TOPS can-do composite consists of five TAPAS scales and is designed to predict can-do criteria such as military occupational specialty (MOS)-specific job knowledge, Advanced Individual Training (AIT) exam grades, and graduation from AIT/One Station Unit Training (OSUT).
2. Will-Do Composite: The TOPS will-do composite consists of five TAPAS scales (three of which overlap with the can-do composite) and is designed to predict will-do criteria such as physical fitness, adjustment to Army life, effort, and support for peers.

The target population for these composites was AFQT Category IIIB applicants, though, due to changing recruitment priorities (as described in Knapp, Heffner, & White, 2010) the target group was later changed to AFQT Category IV applicants. Initial validity and adverse impact results suggest that cut scores based on these two composites were promising for selecting high quality Soldiers from this category with little adverse impact.

PURPOSE OF THE CURRENT RESEARCH

The primary objective of this effort was to evaluate the effectiveness of the TAPAS as a tool for MOS qualification. In addition, we also conducted preliminary analyses to examine the usefulness of TAPAS for MOS classification. Past research has provided initial validity evidence for using TAPAS for applicant accessions (Knapp & Heffner, 2010) and for MOS classification (Knapp, Owens, Allen, 2011). Thus, the goal of the present research was to expand these efforts using larger samples and the updated version of the TAPAS being administered at the MEPS in high-stakes applicant settings. The central activity in this effort involved analyzing TAPAS data as well as criterion data, including job knowledge tests, performance evaluations, attitude

measures and attrition data to determine whether Soldiers can be effectively classified into high density MOS such as Infantry (11B), Combat Medics (68W), Military Police (31B), and Motor Transport Operators (88M).

This report describes the two broad approaches that were taken to evaluate the usefulness of TAPAS as a qualification and classification tool. First, we examined the *predictive accuracy* of the TAPAS scales for predicting criteria important to the Army. Second, we studied whether placement into an MOS on the basis of TAPAS scores could yield increased performance, improved attitudes, and reduced attrition over the current qualification and classification systems.

METHOD

SAMPLE

The data for this research effort included TAPAS and criterion data collected through June 2011 in the *Tier One Performance Screen* (TOPS; Knapp & Heffner, in press) program. The data consisted of a total of 151,625 respondents. Approximately 81% of the sample (N = 122,342) were male and 65% (N = 98,098) were Caucasian. In addition, 59% (N = 88,720) of the sample were Regular Army, 29% (N = 43,891) were Army National Guard, and 11% (N = 17,045) were in the Army Reserve Component. From this sample, we examined relationships among the TAPAS scales and various criteria in the four largest MOS in the database: Infantry (11B), Combat Medics (68W), Military Police (31B), and Motor Transport Operators (88M).

The largest MOS was Infantry (11B) with a total sample size of 9,231. However, after removing invalid responders (i.e., those that did not answer at least 80% of the items) and individuals identified as potentially unmotivated (e.g., responded too quickly or selected the same response option too many times), the analyses were based on a sample of 8,739. The 11B analysis sample was 100% (N = 8,733) male and 72% Caucasian (N = 6,245). In addition, 68% (N = 5,902) of the sample were Regular Army, 29% (N = 2,541) were Army National Guard, and only 2% (N = 174) were in the Army Reserve Component.

The total sample size for MOS 31B (Military Police) was 2,386. After removing invalid and unmotivated responders, the analyses were based on a sample of 2,307. The analysis sample was 74% (N = 1,708) male and 72% Caucasian (N = 1,663). In addition, 31% (N = 720) of the sample were Regular Army, 51% (N = 1,164) were Army National Guard, and 17% (N = 381) were in the Army Reserve Component.

The total sample size for MOS 68W (Combat Medics) was 3,425. After removing invalid and unmotivated responders, the analyses were based on a sample of 3,292. The analysis sample was 71% (N = 2,331) male and 68% Caucasian (N = 2,225). In addition, 54% (N = 1,776) of the sample were Regular Army, 29% (N = 958) were Army National Guard, and 15% (N = 494) were in the Army Reserve Component.

The total sample size for MOS 88M (Motor Transport Operators) was 3,037. After removing invalid and unmotivated responders, the analyses were based on a sample of 2,872. The analysis sample was 77% (N = 2,224) male and 65% Caucasian (N = 1,875). In addition, 34% (N = 975) of the sample were Regular Army, 47% (N = 1,335) were Army National Guard, and 18% (N = 510) were in the Army Reserve Component.

MEASURES

Predictor Measure: Tailored Adaptive Personality Assessment System (TAPAS). Table 1 lists the descriptions of the personality dimensions assessed by the 13-dimension and 15-dimension TAPAS MEPS versions.

Table 1. TAPAS Dimensions Assessed in the MEPS

TAPAS Facet Name	Brief Description	"Big Five" Broad Factor
Dominance	High scoring individuals are domineering, "take charge" and are often referred to by their peers as "natural leaders."	Extraversion
Sociability	High scoring individuals tend to seek out and initiate social interactions.	
Attention Seeking	High scoring individuals tend to engage in behaviors that attract social attention; they are loud, loquacious, entertaining, and even boastful.	
Generosity	High scoring individuals are generous with their time and resources.	Agreeableness
Cooperation	High scoring individuals are trusting, cordial, non-critical, and easy to get along with.	
Achievement	High scoring individuals are seen as hard working, ambitious, confident, and resourceful.	Conscientiousness
Order	High scoring individuals tend to organize tasks and activities and desire to maintain neat and clean surroundings.	
Self-Control[a]	High scoring individuals tend to be cautious, levelheaded, able to delay gratification, and patient.	
Non-Delinquency	High scoring individuals tend to comply with rules, customs, norms, and expectations, and they tend not to challenge authority.	
Adjustment[a]	High scoring individuals are worry free, and handle stress well; low scoring individuals are generally high strung, self-conscious and apprehensive.	Emotional Stability
Even Tempered	High scoring individuals tend to be calm and stable. They don't often exhibit anger, hostility, or aggression.	
Optimism	High scoring individuals have a positive outlook on life and tend to experience joy and a sense of well-being.	
Intellectual Efficiency	High scoring individuals are able to process information quickly and would be described by others as knowledgeable, astute, and intellectual.	Openness To Experience
Tolerance	High scoring individuals scoring are interested in other cultures and opinions that may differ from their own. They are willing to adapt to novel environments and situations.	
Physical Conditioning	High scoring individuals tend to engage in activities to maintain their physical fitness and are more likely to participate in vigorous sports or exercise.	Other

[a] Not included in TAPAS-13D-CAT.

The administration procedures for the three TAPAS versions administered in the MEPS were identical. Each testing session was initiated by a test administrator who entered the examinee's identification number into the computer. Next, each examinee was asked to read information related to the purpose of the assessment and sign a consent form. After electronically signing the document, examinees saw an instruction page that provided detailed information about answering TAPAS items and then proceeded to answer the actual test items. Testing proceeded until all items were completed or the 30 minute time limit elapsed. Detailed results for each TAPAS testing session were then saved and transferred to a central database upon test completion. These included trait scores, the number of minutes taken to complete the test, flags to detect fast responders, and other relevant item response data. Scores were considered "valid" only if an examinee completed at least 80% of the items. (Note that in the event of a test interruption, the administrator could save the session and restart the assessment at the same point).

For comparison with the MOS-specific results presented next, Table 2 shows Army-wide descriptive statistics for the 15 TAPAS dimensions administered at the MEPS. Prior to running all analyses, the TAPAS data were screened for unmotivated responders. Responders were flagged as potentially unmotivated if their observed response patterns contained an unusually low/high number of Statement 1 selections, or their item/test response latencies were unusually fast (e.g., responding to items in less than 1 or 2 seconds).

In Table 2, both the raw and normed scores are presented. To facilitate the comparability of scores across the three TAPAS versions, raw dimension scores were normed and transformed into percentile scores and then into standardized scores within each version, so a score of, say, + 1.0 meant that an examinee was 1.0 SD above the mean with respect to the norm group. As can be seen in Table 2, the majority of TAPAS standardized dimension scores had means near zero and standard deviations around one. The normed scores ranged from -2.33 to 2.33. Minor deviations from the expected mean of zero that were observed for the total sample were due to slight differences between the Army-wide sample and the norm group, which was composed of 60,485 Army examinees who completed TAPAS between May 2009 and May 2010. The smaller sample sizes for the Adjustment and Self Control dimensions reflected the fact that these two dimensions were not included in the 13-D TAPAS version. Therefore, individuals who were administered this version of TAPAS did not provide responses for these two dimensions but did for the 13 facets that were consistent across TAPAS versions.

Table 2. Descriptive Statistics for the TAPAS Dimensions in the Total Sample

TAPAS Facets	N	Raw Mean	Raw Standard Deviations	Normed[b] Mean	Normed[b] Standard Deviations
TAPAS: Achievement	145,090	.17	.49	.00	.99
TAPAS: Adjustment[a]	143,610	.01	.58	-.01	.99
TAPAS: Cooperation	145,090	-.07	.38	-.01	.99
TAPAS: Dominance	145,090	.03	.58	-.01	.96
TAPAS: Even Tempered	145,090	.16	.47	-.03	.96
TAPAS: Attention Seeking	145,090	-.21	.52	.00	.97
TAPAS: Selflessness	145,090	-.19	.44	.01	1.00
TAPAS: Intellectual Efficiency	145,090	-.03	.58	-.01	.98
TAPAS: Non-delinquency	145,090	.08	.46	-.01	.99
TAPAS: Order	145,090	-.40	.54	.04	.97
TAPAS: Physical Conditioning	145,090	.03	.61	.03	.96
TAPAS: Self-Control[a]	143,610	.05	.54	-.04	.99
TAPAS: Sociability	145,090	-.06	.58	.00	.96
TAPAS: Tolerance	145,090	-.22	.56	.01	.96
TAPAS: Optimism	145,090	.14	.46	-.01	.96

[a] Not included in TAPAS-13D-CAT.
[b] Scores were standardized based on a norming sample of 60,485 Army examinees who completed TAPAS between May 2009 and May 2010.

Predictor Measure: Armed Services Vocational Aptitude Battery (ASVAB). Because of its role in the current selection and classification systems, we used ASVAB scores as the baseline for comparing the predictive validity of the TAPAS scales in each MOS. The ASVAB contains 9 subtests that assess multiple aptitudes which are combined to create composites and used as the basis for current selection and classification decisions. For example, the Armed Forces Qualification Test (AFQT) which is a composite of the Word Knowledge, Paragraph Comprehension, Arithmetic Reasoning, and Math Knowledge subtests of the ASVAB, is used for enlistment screening. For MOS classification, the ASVAB subtests are used to form nine Aptitude Area (AA) composites that correspond to the various MOS. The Combat AA composite is used for MOS 11B (Infantry), the Skilled Technical AA composite is used for both MOS 31B (Military Police) and for MOS 68W (Combat Medics), and the Operators and Food AA composite is used for MOS 88M (Motor Transport Operators). Applicants must receive a minimum score on each of these composites to qualify for the corresponding MOS. Again, although the focus of this report is on the validity of TAPAS for predicting performance in each MOS, correlations with the AA composites and preliminary evidence of incremental validity are provided to illustrate the potential contribution that TAPAS can make as a supplement to the current MOS qualification procedures.

Criterion Measures. A number of criterion measures were available for evaluation of the TAPAS. These were collected as part of the TOPS program and included End of Training Assessments and Administrative Criteria (Knapp, Heffner & White, 2010). More specifically, the criteria included the Army-Wide and MOS-Specific Job Knowledge Tests (JKT), the Army Life Questionnaire (ALQ), Army-Wide and MOS-Specific Performance Rating Scales, the Army Physical Fitness Test (APFT) scores, Training Achievement (AIT/OSUT Schoolhouse Grades), Training Failure (AIT/OSUT Graduation), Disciplinary Incidents, and Attrition. Below, we provide an overview of each of these criterion measures. Descriptive statistics for the criterion measures in the total sample are presented in Table 3.

The first End of Training criterion measures were the Army-Wide and MOS-Specific JKTs, which were originally developed for the *Future Force Performance Measures* (*Army Class*) project (Knapp & Heffner, 2009). The Army-Wide JKT assessed general aspects of Soldier performance applicable across all Army MOS. The MOS-Specific JKTs assessed knowledge of basic facts, principles, and procedures required of Soldiers during training using a variety of item formats including multiple choice and rank order. MOS-Specific JKTs utilized in this effort were for Infantry (11B), Military Police (31B), Combat Medics (69W) and Motor Transport Operators (88M). For the current analyses, we used the total score across all JKT items for that MOS.

The next measure included was the ALQ, which assesses Soldiers' self-reported attitudes and experiences in the Army, and particularly, for these data, in training. For the current effort, the focus was on nine dimensions: Affective Commitment, Normative Commitment, Army Career Intentions, Reenlistment Intentions, Army-Civilian Comparison, Attrition Cognition, Army Life Adjustment, Army Needs-Supply Fit, and MOS Fit. Each of these dimensions is measured on four to nine item scales. Additionally, the ALQ data set included Soldiers' most recent APFT scores. The APFT is a measure of physical fitness as indexed by ability to perform certain numbers of push-ups and sit-ups, and time taken to complete a two mile run, adjusted for age. Finally, the ALQ data also included self-reported Disciplinary Incidents. For these, scores were computed by summing the "yes" responses to a list of possible incidents.

Additional End of Training criterion measures utilized in this research were Performance Ratings, both MOS-specific and Army-wide. These were Behaviorally Anchored Rating Scales (BARS), assessing from five to nine dimensions, depending on MOS and ranging from 1 (lowest) to 7 (highest) with an option for "not observed." For each rating, drill sergeants or training cadre provided a rating for each dimension of performance, utilizing examples of low, medium, and high performance as anchors. The BARS were also supplemented with a rating of the extent to which the rater was familiar with, and had opportunity to observe, the Soldier's performance. These ratings reflected either limited, reasonable, or a lot of opportunity to observe.

With regard to Administrative criteria, Soldier attrition was also available in the data set. Attrition generally includes voluntary and involuntary separations from the Army for a variety of reasons as designated by the Soldier's Separation Program Designator code. The measure of

attrition used here was a single dichotomous variable (1 = Attrite, 0 = Did Not Attrite) that reflected whether the Soldier had separated 6 months into his or her Army career.

The next two Administrative criteria were also related to training, and were obtained from the Army Training Requirements and Resources System (ATTRS) and Resident Individual Training Management System (RITMS). The first of these was whether the Soldier had graduated from AIT/OSUT. This variable, Training Failure, was scored dichotomously (0 = Failure, 1 = Graduate). Soldiers who were still enrolled in initial military training (IMT) were excluded from analyses using the "graduation" variable. The second training variable taken from IMT records reflected Training Achievement and included AIT/OSUT School Grades.

Table 3. Descriptive Statistics for Criterion Measures in the Total Sample

Criteria	N	Mean	Standard Deviation	Min.	Max.
Army Wide JKT (Proportion Correct)	4,551	20.79	3.78	6.00	30.00
Army Physical Fitness Test Score	4,625	250.67	30.83	66.00	300.00
ALQ Affective Commitment	4,680	3.86	.66	1.00	5.00
ALQ Normative Commitment	4,680	4.19	.67	1.00	5.00
ALQ Army Career Intentions	4,680	3.09	1.08	1.00	5.00
ALQ Reenlistment Intentions	4,680	3.41	.96	1.00	5.00
ALQ Army-Civilian Comparison	4,662	3.90	.69	1.00	5.00
ALQ Attrition Cognition	4,680	1.51	.59	1.00	5.00
ALQ Army Life Adjustment	4,680	4.08	.65	1.00	5.00
ALQ MOS Fit	4,680	3.81	.83	1.00	5.00
Army Wide Performance Ratings	1,614	43.18	8.71	7.00	61.00
Training Achievement	4,671	.40	.60	.00	2.00
Training Failure	4,680	.35	.59	.00	3.00
Disciplinary Incidents	3,041	.24	.58	.00	6.00
6-month Attrition	18,268	.09	.29	.00	1.00

For these criteria, we screened out respondents that took less than 14 minutes to complete the entire end-of-training assessment which included the MOS-specific job knowledge tests, the Army-wide job knowledge test, and the Army Life Questionnaire (ALQ). In addition, ALQ data were flagged as unusable if the Soldier omitted more than 10% of the assessment items, completed the ALQ in less than 5 minutes, or chose an implausible response to a careless responding item. The careless responding item embedded in the ALQ asks “What is your current branch of service?” and provides the response options of “Air Force, Army, Navy, Marines.” Because all respondents were in the Army, a response other than "Army" was considered implausible. Note that these exclusion criteria further reduced the sample sizes for our analyses. In other words, the sample sizes for the validation analyses were smaller than those reported above for the TAPAS scales alone. The reduced sample sizes are reported below for each MOS.

Criterion Composites. Given the large number of criteria measured, we developed a reduced set of criteria for our analyses by combining outcomes into criterion composites. The goal of this step was to create a small number of variables that could be used as outcomes for developing TAPAS classification composites. First, we examined the nine performance rating dimensions and the nine ALQ scales. Correlations among the performance ratings are presented

in Table 4. As shown, a number of these scales were highly correlated. Therefore, we conducted factor analyses to determine whether these scales could be reasonably combined.

Table 4. Correlations Among the Performance Rating Scales in the Total Sample

	1	2	3	4	5	6	7	8	9
1. Effort	1.00								
2. Physical Fitness and Bearing	**.69**	1.00							
3. Personal Discipline	**.71**	**.65**	1.00						
4. Commitment/Adjustment to the Army	**.68**	**.64**	**.76**	1.00					
5. Support for Peers	**.66**	**.59**	**.72**	**.74**	1.00				
6. Peer Leadership	**.65**	**.62**	**.68**	**.67**	**.70**	1.00			
7. Common Task Knowledge and Skill	**.62**	**.59**	**.68**	**.71**	**.68**	**.70**	1.00		
8. MOS Knowledge and Skill	**.64**	**.59**	**.66**	**.70**	**.64**	**.68**	**.80**	1.00	
9. Overall Performance	**.57**	**.55**	**.56**	**.55**	**.49**	**.60**	**.51**	**.52**	1.00

Note. Bold values are significant at the .05 level.

First, we conducted an exploratory factor analysis (EFA) of the performance rating data. The scree plot shown in Figure 1 indicates a very strong first factor suggesting that the ratings were essentially unidimensional. In addition, a confirmatory factor analysis (CFA) also indicated that a single factor model fit the data well (RMSEA = .08; CFI = .99; NNFI = .98; SRMR = .03). In this model, the error terms for ratings of MOS and Common Task Knowledge and Skill were allowed to correlate because of their similar content. The completely standardized factor loadings from this CFA model are shown in Table 5. Based on these results, we summed the nine performance ratings into a single score.

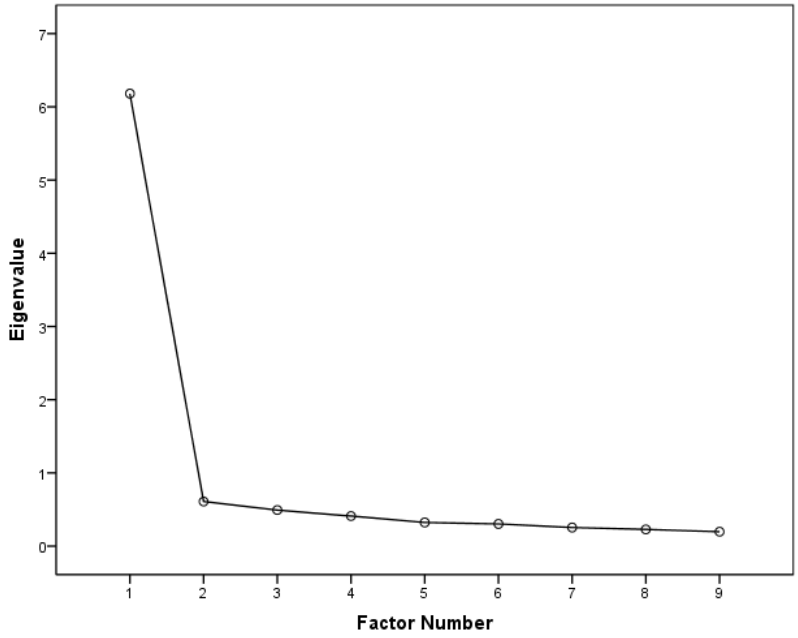

Figure 1. Scree Plot of the Performance Rating Scales in the Total Sample

Table 5. Factor Loadings from the Single Factor CFA Model of the Performance Rating Scales in the Army-Wide Sample

Performance Rating Scales	Overall Performance
1. Effort	.81
2. Physical Fitness and Bearing	.76
3. Personal Discipline	.86
4. Commitment/Adjustment to the Army	.86
5. Support for Peers	.83
6. Peer Leadership	.83
7. Common Task Knowledge and Skill	.81
8. MOS Qualification and Skill	.79
9. Overall Performance	.66

Factor analyses were also performed on the ALQ scales. The scree plot for these scales is illustrated in Figure 2. As shown, these scales were less clearly unidimensional than the performance ratings but still indicated a strong first factor. Therefore, we conducted a one-factor CFA on the ALQ scales. Because of their similar content, the error terms for the Career Intentions and Reenlistment Intentions scales were allowed to correlate as were the error terms for the Normative Commitment and Attrition Cognition scales. The factor loadings from this

model are provided in Table 6. Overall, the model fit the data well (RMSEA = .10; CFI = .98; NNFI = .97; SRMR = .04).

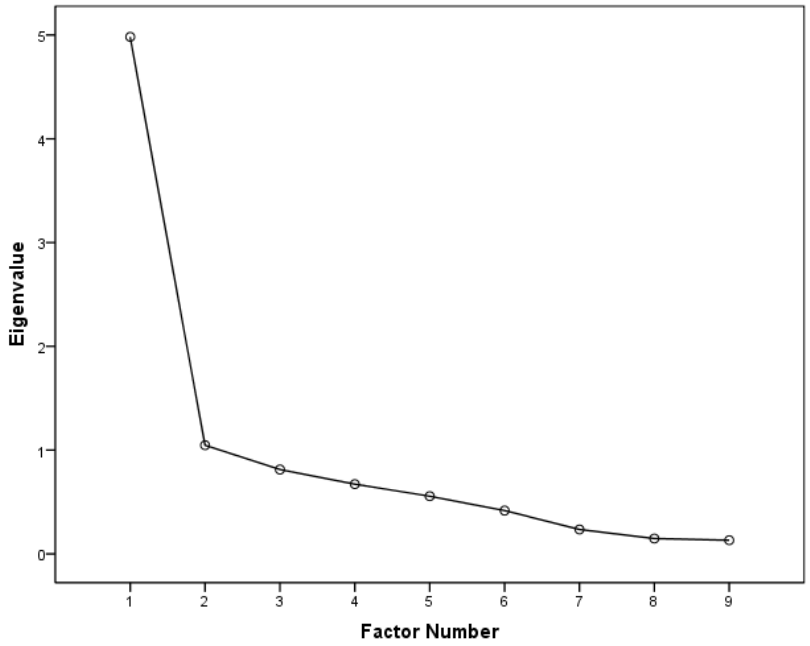

Figure 2. Scree Plot of the ALQ Scales in the Army-Wide Sample

Table 6. Factor Loadings from the Single Factor CFA Model of the ALQ Scales in the Army-Wide Sample

ALQ Scales	Overall Adjustment
1. Affective Commitment	.87
2. Army Life Adjustment	.64
3. Army-Civilian Comparison	.46
4. Army Needs-Supply Fit	.94
5. Attrition Cognitions	-.73
6. Career Intentions	.60
7. MOS Fit	.51
8. Normative Commitment	.75
9. Reenlistment Intentions	.61

Because a smaller number of composites would be more practical to apply in an Army classification setting, it was necessary to reduce the number of criteria even further than suggested by the factor analyses. To do so, more emphasis was placed on creating a manageable number of criterion composites for prediction rather than a unidimensional combination of dependent variables. Therefore, we consulted with ARI to develop a conceptual model of Soldier

performance. This model was based on the conceptual similarities and importance of each criterion to the Army.

In Project A, two predictor composites labeled Can-Do and Will-Do performance were developed for employee selection (Campbell & Knapp, 2001). Similarly, TAPAS composites were developed to predict Can-Do and Will-Do criteria in the EEEM project (Allen et al., 2010). Based on this previous work, we also categorized the criteria in the TOPS dataset into Can-Do and Will-Do composites. However, because attrition represents a substantial cost for the Army, we also examined this variable as a separate outcome. Thus, three criterion composites were created for our analyses. Can-Do performance was comprised of scores on the Army-wide and MOS-specific job knowledge tests. Will-Do performance consisted of performance ratings (Army-wide and MOS-specific ratings), the ALQ scales (e.g., adjustment, commitment, reenlistment intentions), Army Physical Fitness Test (APFT) scores, training achievement, training failure, and disciplinary incidents. Given their importance to the Army, APFT scores and disciplinary incidents were double weighted whereas the other components of this criterion composite were unit weighted. Scores for each criterion were first standardized to account for differences in their standard deviations and then summed to create overall scores for the Can-Do and Will-Do composites. Attrition refers to 6-month attrition from the Army.

Predictor-Criterion Correlations for the Army-Wide Sample. Table 7 shows the correlations among each of the TAPAS dimensions and the individual criteria assessed in the TOPS dataset. As expected, the Intellectual Efficiency dimension had the largest influence on the Army-wide job knowledge test. In addition, the Physical Conditioning scale showed substantial correlations with APFT scores. Across all of the criteria, the Achievement and Dominance scales seemed to have consistent effects with a number of correlations greater than .10. For additional comparisons, correlations with each of the ALQ and performance rating subscales are reported in the Appendix.

Table 7. Correlations Between the TAPAS Facet Scales and Each Criterion in the Army-Wide Sample

	TAPAS Facets														
Criteria	Achievement	Adjustment	Cooperation	Dominance	Even-Tempered	Attention-Seeking	Selflessness	Intellectual Efficiency	Non-Delinquency	Order	Physical Conditioning	Self-Control	Sociability	Tolerance	Optimism
Will-Do Criterion Composite	.19	.02	.00	.16	.04	.05	-.02	.05	.01	-.02	.26	.03	.03	.00	.13
APFT Scores	**.09**	.01	-.01	**.14**	**-.07**	**.07**	.00	**.04**	**-.05**	.02	**.28**	-.02	**.04**	.02	**.05**
Overall ALQ	**.14**	.02	.00	**.11**	**.04**	**.04**	**.05**	.02	.03	.00	**.03**	.03	.02	**.05**	**.08**
Performance Ratings	**.08**	-.03	-.04	.04	.00	.01	-.05	-.01	.00	.01	**.12**	-.01	.00	-.01	**.06**
Training Achievement	**.09**	.00	**-.03**	**.11**	**-.04**	**.04**	-.01	-.02	-.01	**.04**	**.13**	.01	**.03**	.00	.02
Training Failure	**-.09**	**-.05**	.02	**-.11**	**.03**	**-.05**	**.05**	**-.08**	.02	.02	**-.16**	.00	-.02	**.08**	**-.04**
Disciplinary incidents	**-.06**	-.01	.00	**-.04**	-.01	.00	-.01	-.02	-.03	.01	**-.08**	-.03	.03	.01	-.02
Can-Do Criterion Composite	**.06**	**.08**	-.03	**.04**	**.05**	**.05**	**-.05**	**.25**	-.02	**-.09**	-.01	-.01	**-.08**	-.03	.01
MOS-Specific Job Knowledge Test	**.05**	**.06**	-.02	.00	.03	.03	**-.04**	**.20**	-.02	**-.08**	-.03	-.01	**-.08**	-.02	-.01
Army-Wide Job Knowledge Test	**.06**	**.09**	-.03	**.06**	**.05**	**.06**	**-.05**	**.24**	-.02	**-.08**	.01	.00	**-.06**	-.03	.02
6-month Attrition	-.01	**-.02**	-.01	-.01	-.01	**-.03**	**.03**	-.01	.01	**.02**	**-.06**	.00	.00	.01	**-.03**

Note. Bold values are significant at the .05 level.

OVERVIEW OF ANALYSES

Two sets of analyses were conducted to evaluate TAPAS as a qualification tool. For the first set of analyses, we used correlation and regression analysis to identify the predictive validity of the TAPAS facets. Specifically, we developed TAPAS composites to predict the Can-Do, Will-Do, and Attrition criteria in each MOS. Again, the Can-Do criteria was a composite of Army-Wide and MOS-specific job knowledge tests; Will-Do was comprised of performance ratings, training achievement and failure, disciplinary incidents, and the ALQ scales; and attrition refers to 6-month attrition from the Army.

In each of the target MOS, we developed three separate TAPAS composites for predicting the three criteria. However, due to the large differences in sample sizes, we used different approaches to identify the composites in each MOS. In the Infantry, which was the largest MOS in the dataset, we regressed Can-Do, Will-Do, and Attrition onto the TAPAS scales and estimated the regression weights for each facet. Ordinary least squares (OLS) regression was used for the Can-Do and Will-Do composites and logistic regression was used for the dichotomous 6-month attrition variable. Based on these analyses, we identified the TAPAS scales that were significant predictors of each criterion and used these scales to form TAPAS composites for use in MOS qualification. Then, we computed predicted scores for each of the three criteria using only these TAPAS scales and the regression weights estimated for the Infantry.

In contrast, the sample sizes for MOS 31B, 68W, and 88M were not large enough for stable estimation of regression weights for the TAPAS composites. Therefore, we used a combination of regression and correlation analyses to identify the components of each composite. Specifically, we calculated the correlations and estimated the regression models for each criterion. Then, the TAPAS scales with the largest correlations and/or the largest standardized regression weights were used for each composite. Because these results are based on the relative strength of these relationships and not necessarily on statistical significance, these composites should be considered preliminary and additional analyses will be required when more data have been collected. The MOS-specific composites and their relationships to various outcomes are illustrated in the next section.

The second set of analyses examined whether using TAPAS could improve the assignment of Soldiers to MOS. From our analyses of predictive accuracy, we obtained standardized regression equations for predicting the criterion variables in each MOS from the composites of TAPAS scales. Using these equations, we computed predicted scores on the Can-Do, Will-Do, and Attrition variables for each person in each MOS. Individuals were then (hypothetically) assigned to the MOS for which they have the highest potential for performance and satisfaction. Finally, we evaluated whether using TAPAS in this way could improve performance potential across MOS. Although this approach provides an overly simplified view of the classification process (i.e., it does not consider factors like Soldier preference, MOS needs, or availability), these analyses illustrate the potential gains in performance that can be obtained by using the TAPAS.

PREDICTIVE VALIDITY: MOS 11B (INFANTRY)

Table 8 shows the descriptive statistics for the TAPAS scales and the criterion composites for the largest MOS in this sample (11B). Again, raw dimension scores were normed and transformed into standardized scores within each version, so a score of, say, + 1.0 meant that an examinee was 1.0 SD above the mean with respect to the norm group. In other words, departures from the mean of zero indicate differences between this group and the Army-wide sample of applicants used for norming. As such, Table 8 suggests that the Infantry Soldiers in this sample had higher mean scores on Physical Conditioning and Adjustment but lower mean scores on Tolerance, Selflessness, and Order relative to the Army-wide sample used for norming the TAPAS scores. Table 9 shows the correlations among the TAPAS facets and each of the criteria in the dataset, including the three criterion composites created for these analyses. In addition, correlations with each of the ALQ and performance rating subscales are provided in the Appendix for MOS 11B.

Table 8. Descriptive Statistics for the TAPAS Scales and Criterion Composites in MOS 11B

TAPAS Scales	N	Raw Mean	Raw Standard Deviation	Normed[a] Mean	Normed[a] Standard Deviation
TAPAS: Achievement	8,739	.19	.49	.04	.99
TAPAS: Adjustment	8,622	.10	.58	.14	.98
TAPAS: Cooperation	8,739	-.08	.38	-.04	.99
TAPAS: Dominance	8,739	.06	.60	.06	.99
TAPAS: Even Tempered	8,739	.17	.48	-.02	.98
TAPAS: Attention Seeking	8,739	-.15	.55	.10	1.00
TAPAS: Selflessness	8,739	-.25	.43	-.13	.98
TAPAS: Intellectual Efficiency	8,739	-.03	.58	.00	.97
TAPAS: Non-delinquency	8,739	.07	.47	-.03	1.00
TAPAS: Order	8,739	-.49	.54	-.13	.96
TAPAS: Physical Conditioning	8,739	.20	.62	.30	.95
TAPAS: Self-Control	8,622	.03	.54	-.07	1.00
TAPAS: Sociability	8,739	-.05	.60	.01	1.00
TAPAS: Tolerance	8,739	-.32	.57	-.16	.97
TAPAS: Optimism	8,739	.19	.46	.08	.96
Criterion Composites					
Will-Do Criterion	660	-.06	5.20	[b]	[b]
Can-Do Criterion	1,862	.04	1.59	[b]	[b]
6-month Attrition	4,064	.10	.30	[b]	[b]

[a] TAPAS scores were standardized based on a norming sample of 60,485 Army examinees who completed TAPAS between May 2009 and May 2010.
[b] The criterion composites were not normed and, therefore, only the raw scores are reported.

Table 9. Correlations Between the TAPAS Facet Scales and Each Criterion in MOS 11B

Criteria	TAPAS Facets: Achievement	Adjustment	Cooperation	Dominance	Even-Tempered	Attention-Seeking	Selflessness	Intellectual Efficiency	Non-Delinquency	Order	Physical Conditioning	Self-Control	Sociability	Tolerance	Optimism
Will-Do Criterion Composite	.24	.02	-.08	.16	.03	.04	.03	.05	.04	-.01	**.26**	.00	.03	.00	**.16**
APFT Scores	.10	-.01	-.03	.15	-.09	.02	.01	.01	-.02	**.05**	**.29**	-.04	.02	.03	.02
Overall ALQ	.21	.01	-.03	.12	.04	**.05**	**.05**	**.05**	.04	-.02	**.10**	.02	.02	.03	**.10**
Performance Ratings	.10	-.01	-.07	.01	.04	.03	-.02	-.01	.05	-.05	**.13**	-.04	.01	.02	**.11**
MOS-Specific Ratings	.05	.01	-.02	-.04	.06	-.03	-.05	.01	-.02	-.06	**.08**	-.03	.04	-.02	**.08**
Training Achievement	.10	-.02	-.03	.12	-.01	.03	.02	-.04	-.01	**.08**	**.10**	.03	.04	.04	-.02
Training Failure	-.08	-.03	.02	-.11	.03	-.04	.02	**-.05**	.01	.03	**-.12**	.03	-.03	**.06**	-.03
Disciplinary Incidents	-.08	-.03	.01	-.03	.01	.02	-.01	-.02	-.03	.01	**-.05**	-.02	.04	.02	-.02
Can-Do Criterion Composite	**.07**	**.08**	-.03	.01	**.07**	**.07**	-.02	**.23**	-.01	**-.08**	.03	.00	**-.07**	-.04	.03
MOS-Specific Job Knowledge Test	**.06**	**.05**	-.01	-.01	**.06**	**.06**	.00	**.19**	.00	**-.06**	.01	.00	**-.06**	-.04	.03
Army-Wide Job Knowledge Test	**.07**	**.09**	-.04	.04	**.07**	**.07**	-.04	**.22**	-.02	**-.07**	.04	-.01	**-.07**	-.03	.03
6-month Attrition	-.02	-.01	.02	**-.04**	.01	**-.07**	**.04**	.00	**.03**	**.04**	**-.12**	**.03**	-.02	**.03**	-.02

Note. Bold values are significant at the .05 level.

The scales comprising the TAPAS composites for the Can-Do, Will-Do, and Attrition criteria in MOS 11B are indicated in Table 10. The values presented in this table for the Can-Do and Will-Do composites represent the standardized regression weights for each of the TAPAS facets that were significant predictors of the criterion composite. However, because standardized weights are not available for logistic regression, the regression coefficients for the Attrition composite are the unstandardized values. Note that the Attrition variable is also coded in the opposite direction of the Can-Do and Will-Do composites. In other words, higher scores on the TAPAS composites should lead to lower probabilities of attrition. The multiple Rs for the three criteria ranged from .22 to .33 and the adjusted Rs were .27 and .32 for Can-Do and Will-Do, indicating that the TAPAS composites developed here were moderate predictors of performance in the Infantry.

Because personality is an antecedent for motivation to perform well on the job (Judge & Ilies, 2002), TAPAS scales were expected to be particularly strong predictors of Will-Do criteria. As shown in Table 10, this was the case in MOS 11B. The multiple R for the Will-Do composite was .33 and was larger than either of the other criterion composites. In addition, the Physical Conditioning scale was the best predictor of the Will-Do performance criterion. Physical Conditioning was also the strongest predictor of attrition and high scores on this scale led to a lower probability of leaving the Army. Not surprisingly, the TAPAS Intellectual Efficiency scale was the best predictor of can-do performance.

Table 10. Standardized Regression Weights for the TAPAS Facets in each Composite for MOS 11B

	Criteria		
TAPAS Facets	**Can-Do**	**Will-Do**	**Attrition[a]**
TAPAS: Achievement		.16	
TAPAS: Adjustment			
TAPAS: Cooperation			
TAPAS: Dominance	-.03		
TAPAS: Even Tempered	.05		
TAPAS: Attention Seeking	.09		-.18
TAPAS: Selflessness			
TAPAS: Intellectual Efficiency	.23		
TAPAS: Non-delinquency			
TAPAS: Order	-.08		.15
TAPAS: Physical Conditioning		.22	-.41
TAPAS: Self-Control			
TAPAS: Sociability	-.09		
TAPAS: Tolerance	-.05		
TAPAS: Optimism		.08	
Multiple R	.28	.33	.22
Adjusted Multiple R	.27	.32	N/A

[a] Because standardized weights are not available in logistic regression, the regression weights reported for the TAPAS Attrition composite are the unstandardized coefficients.

Using the TAPAS composites shown in Table 10, we calculated the predicted scores on all three of these composites for each individual in MOS 11B. Table 11 shows the significant zero-order correlations between these predicted scores and the various criteria measured in this dataset. Overall, the TAPAS composite for the Will-Do criterion showed the largest number of significant correlations across the three criteria. This is not surprising given the breadth of the Will-Do criterion. However, the TAPAS composites for the Can-Do and Attrition criteria were also significantly correlated with a number of outcomes. For comparison, correlations between the predicted scores from the TAPAS composites and the Combat Aptitude Area Composite (AAC) used to select Infantry are also included. As expected, the Combat AAC was most highly correlated with the TAPAS Can-Do Composite. Correlations between the TAPAS composites and the ALQ and performance rating subscales are provided in the Appendix.

Table 11. Significant Correlations Between the Criterion Measures and the Predicted Scores on the TAPAS Composites in MOS 11B

	Predicted Scores on 11B Composites		
Criteria	Can-Do TAPAS Composite	Will-Do TAPAS Composite	Attrition TAPAS Composite
Combat Aptitude Area Composite	.44	.10	-.10
Can-Do Criterion Composite	.29	.06	.08
MOS-Specific Job Knowledge Test	.23		-.06
Army-Wide Job Knowledge Test	.26	.07	-.08
Will-Do Criterion Composite		.33	-.23
APFT Scores		.25	-.23
Overall ALQ		.20	-.10
Performance Ratings		.17	-.15
MOS-Specific Ratings		.10	
Training Achievement	-.07	.12	-.08
Training Failure		-.12	.14
Disciplinary Incidents		-.08	.05
6-Month Attrition		-.10	.14[a]

[a] This value is based on the Pearson correlation between the predicted score and attrition. Due to the dichotomous attrition variable, this value was expected to be lower than the multiple R in Table 10 which was based on logistic regression.

Figure 3 illustrates the practical importance of these relationships. This figure shows quintile plots predicting MOS-specific job knowledge, 6-month attrition, Army Physical Fitness Test (APFT) scores, and disciplinary incidents as examples of the relationships between the criteria and the composites developed here. On the X-axis of these plots are the quintiles for the predicted scores from the three TAPAS composites described above. On the Y-axis are scores on the criterion variable. Because attrition and disciplinary incidents were dichotomous variables, the Y-axes for these graphs represent the percentage of individuals in each quintile that left the Army or were involved in disciplinary incidents. Again, note that attrition and disciplinary incidents were negatively related to the composites described above. Therefore, lower TAPAS scores (i.e., the bottom quintiles) should lead to higher percentages of attrition and disciplinary incidents. The Y-axes for APFT and job knowledge plots are scaled to range from +/- 1 standard deviation from the mean of the criterion.

As shown in Figure 3, TAPAS was useful for identifying high scorers on the APFT and job knowledge test in 11B. Test-takers in the bottom 20% of the Will-Do composite averaged 22 points lower on the APFT than those in the highest 20%. Similarly, test-takers with scores in the lowest quintile for the Can-Do composite scored 5 points lower on the MOS-specific job knowledge test. In addition, 18% of individuals in the lowest quintile of the TAPAS Attrition composite left the Army while only 4% of those in the highest quintile ended their service. Finally, only 14% of the highest scorers on the TAPAS Will-Do composite were involved in

disciplinary incidents compared with 24% of the lowest scorers. These results suggest that the apparently modest correlations illustrated in Tables 9 and 11 can have substantial practical importance when used for MOS qualification. This was particularly evident for 6-month attrition where the correlations were generally small but the TAPAS composite could be used to reduce attrition by nearly 78% (i.e., from 18% attrition to just 4% attrition).

We also examined the incremental validity of the TAPAS composites for predicting important Army criteria over the aptitude area composite used for qualification into MOS 11B. Because aptitude tests like the ASVAB and the aptitude area composites created from its subscales have been shown to be strong predictors of job knowledge (Hunter & Hunter, 1984), we expected the TAPAS to provide little incremental validity when predicting the Can-Do criterion composite. However, given the relationship between personality and performance motivation (Judge & Ilies, 2002), we expect the TAPAS to provide substantial incremental validity for predicting Will-Do and Attrition criteria.

Table 12 provides the results from a hierarchical regression analysis using both the Combat AA composite used for MOS 11B and the TAPAS composites shown in Table 10 to predict Can-Do, Will-Do, and Attrition criteria. In these analyses, the Combat AA Composite was included in Step 1 and the TAPAS scales were added in Step 2. As expected, the TAPAS did not contribute substantially to the prediction of Can-Do criteria when the Combat Aptitude Area composite was already included in the model. However, the TAPAS composites did contribute substantial incremental validity to the prediction of Will-Do criteria and attrition. Adding the TAPAS composites to the regression equations increased the multiple R's by .26 and .12, respectively, when predicting these criteria. Thus, the TAPAS composites developed here can contribute to the prediction of a broader range of criteria.

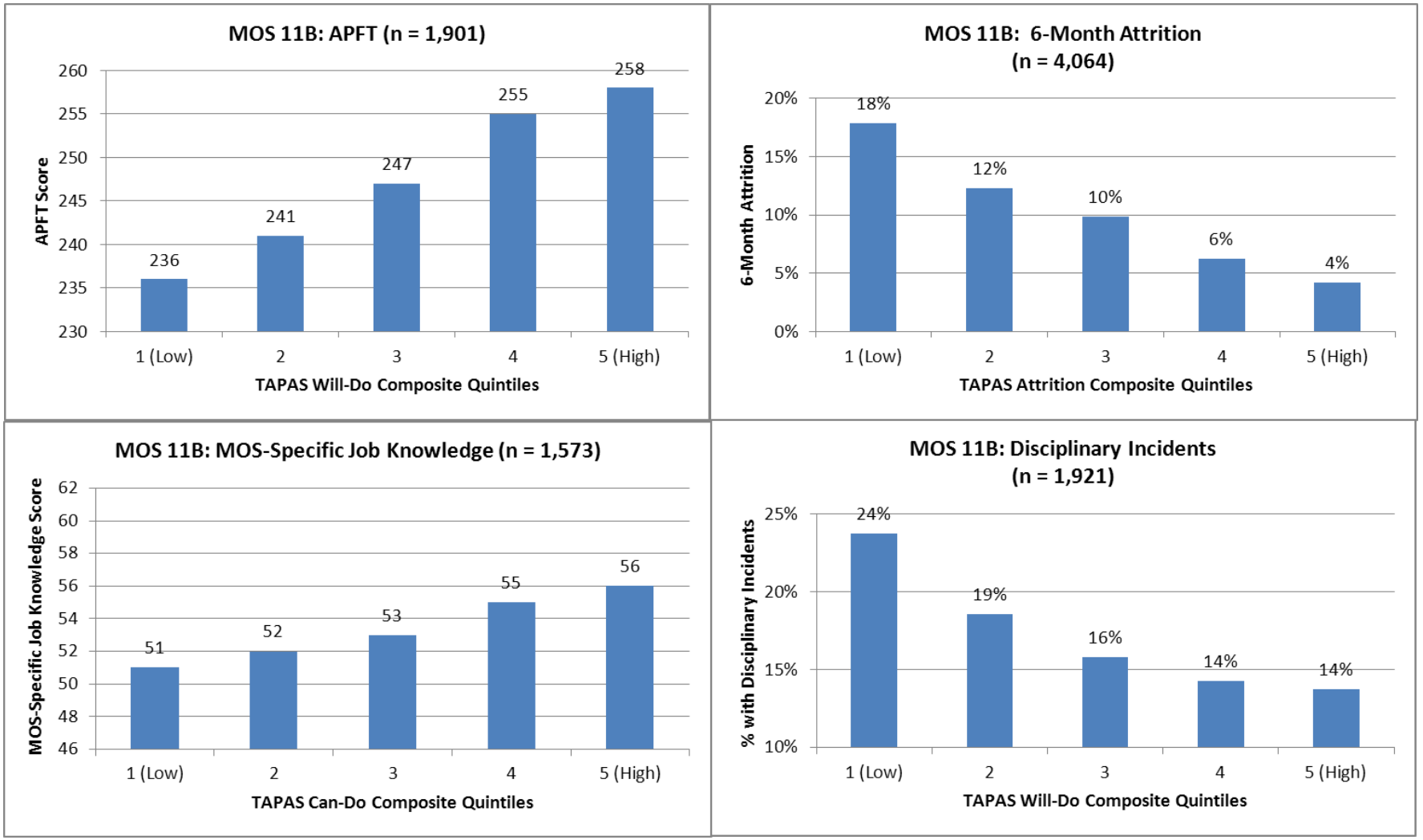

Figure 3. TAPAS Composite Quintile Plots for APFT scores, 6-Month Attrition, MOS-Specific Job Knowledge Scores, and Disciplinary Incidents in MOS 11B

Table 12. Hierarchical Regression Results and Standardized Regression Weights for Predicting the Can-Do, Will-Do, and Attrition Criterion Composites in MOS 11B

	Criteria		
Predictors	Can-Do Criterion Composite	Will-Do Criterion Composite	Attrition Criterion Composite[a]
Step 1			
Combat Aptitude Area Composite	.56	.08	-.02
Multiple R	.56	.08	.10
Step 2			
Combat Aptitude Area Composite	.54	.03	-.02
TAPAS: Achievement		.18	
TAPAS: Adjustment			
TAPAS: Cooperation			
TAPAS: Dominance	-.03		
TAPAS: Even Tempered	.02		
TAPAS: Attention Seeking	.03		-.17
TAPAS: Selflessness			
TAPAS: Intellectual Efficiency	.03		
TAPAS: Non-delinquency			
TAPAS: Order	-.01		.12
TAPAS: Physical Conditioning		.21	-.41
TAPAS: Self-Control			
TAPAS: Sociability	-.03		
TAPAS: Tolerance	.01		
TAPAS: Optimism		.09	
Multiple R	.56	.34	.22
Change in Multiple R	.003	.26*	.12*

[a] Because standardized weights are not available in logistic regression, the regression weights reported for the TAPAS Attrition composite are the unstandardized coefficients.

PREDICTIVE VALIDITY: MOS 31B (MILITARY POLICE)

Table 13 shows the descriptive statistics for the TAPAS scales and the criterion composites in MOS 31B. Again, raw dimension scores were normed and transformed into standardized scores within each version, so a score of, say, + 1.0 meant that an examinee was 1.0 SD above the mean with respect to the norm group. In other words, departures from the mean of zero indicate differences between this group and the Army-wide sample of applicants used for norming. As such, Table 13 suggests that the Military Police in this sample had higher mean scores on Physical Conditioning and Non-Delinquency but lower mean scores on Tolerance and Intellectual Efficiency relative to the Army-wide sample used for norming the TAPAS scores. Table 14 shows the correlations among the TAPAS facets and each of the criteria in the dataset, including the three criterion composites created for these analyses. Additional correlations between the TAPAS facets and each of the ALQ and performance rating subscales are provided in the Appendix for MOS 31B.

Table 13. Descriptive Statistics for the TAPAS Scales and Criterion Composites in MOS 31B

TAPAS Scales	N	Raw Mean	Raw Standard Deviation	Normed[a] Mean	Normed[a] Standard Deviation
TAPAS: Achievement	2,307	.17	.47	.00	.97
TAPAS: Adjustment	2,282	.02	.58	.00	.99
TAPAS: Cooperation	2,307	-.06	.38	.00	1.00
TAPAS: Dominance	2,307	.05	.58	.04	.97
TAPAS: Even Tempered	2,307	.17	.47	-.02	.97
TAPAS: Attention Seeking	2,307	-.20	.55	.01	1.01
TAPAS: Selflessness	2,307	-.20	.44	.00	1.00
TAPAS: Intellectual Efficiency	2,307	-.10	.58	-.11	.97
TAPAS: Non-delinquency	2,307	.15	.46	.14	.98
TAPAS: Order	2,307	-.46	.54	-.08	.96
TAPAS: Physical Conditioning	2,307	.10	.64	.15	1.00
TAPAS: Self-Control	2,282	.04	.54	-.05	.99
TAPAS: Sociability	2,307	-.04	.60	.05	.98
TAPAS: Tolerance	2,307	-.29	.56	-.11	.96
TAPAS: Optimism	2,307	.20	.45	.10	.95
Criterion Composites					
Will-Do	299	.36	5.46	[b]	[b]
Can-Do	745	.51	1.46	[b]	[b]
6-month Attrition	266	.12	.33	[b]	[b]

[a] TAPAS scores were standardized based on a norming sample of 60,485 Army examinees who completed TAPAS between May 2009 and May 2010.
[b] Will-Do, Can-Do, and Attrition composites were not normed and, therefore, only the raw scores are reported.

Table 14. Correlations Between the TAPAS Facet Scales and Each Criterion in MOS 31B

	TAPAS Facets														
Criteria	Achievement	Adjustment	Cooperation	Dominance	Even-Tempered	Attention-Seeking	Selflessness	Intellectual Efficiency	Non-Delinquency	Order	Physical Conditioning	Self-Control	Sociability	Tolerance	Optimism
Will-Do Criterion Composite	**.14**	.04	**.08**	**.21**	**.09**	**.11**	**-.08**	.06	-.06	-.02	**.18**	.07	.06	-.04	**.19**
APFT Scores	.03	.02	.01	**.12**	-.06	**.14**	**-.10**	-.04	**-.08**	.05	**.26**	**-.08**	.06	-.05	**.10**
Overall ALQ	**.16**	.01	.00	**.13**	**.08**	.04	.06	-.01	.00	.06	.01	.05	.04	.06	**.08**
Performance Ratings	.06	-.06	-.05	.08	.06	.03	-.08	.00	-.07	.00	.02	.02	-.02	-.03	.08
MOS-Specific Ratings	-.04	-.06	-.04	.05	.05	.00	-.07	-.01	-.06	-.11	-.04	-.03	.00	-.06	.08
Training Achievement	**.08**	.06	.00	**.13**	**-.07**	.06	**-.08**	-.01	.00	.03	**.18**	.00	.05	-.01	.02
Training Failure	-.06	-.05	-.01	**-.10**	-.03	**-.08**	**.08**	**-.08**	.03	.01	**-.14**	.00	-.01	**.14**	**-.13**
Disciplinary Incidents	-.07	-.04	-.06	-.11	-.08	-.07	.08	-.07	-.06	-.05	**-.13**	**-.12**	.02	.02	-.07
Can-Do Criterion Composite	.07	**.11**	-.01	.01	.07	.03	**-.14**	**.26**	.02	**-.10**	.03	.03	**-.12**	-.06	-.03
MOS-Specific Job Knowledge Test	.05	**.10**	-.01	.00	.06	.02	**-.15**	**.24**	.03	**-.12**	.02	.03	**-.12**	-.01	-.03
Army-Wide Job Knowledge Test	**.07**	**.08**	-.01	.01	**.07**	.03	**-.09**	**.22**	.01	-.04	.04	.01	**-.10**	**-.09**	-.02
6-month Attrition	-.04	-.06	.08	.06	.02	-.01	.07	-.02	.04	.04	-.12	-.02	.07	.10	.00

Note. Bold values are significant at the .05 level.

The scales comprising the TAPAS composites for the Can-Do, Will-Do, and Attrition criteria in MOS 31B are shown in Table 15. The values presented in this table for the Can-Do and Will-Do composites represent the standardized regression weights for each of the TAPAS facets that were significant predictors of the criterion composite. However, because standardized weights are not available for logistic regression, the regression coefficients for the Attrition composite are the unstandardized values. Note that the Attrition variable is also coded in the opposite direction of the Can-Do and Will-Do composites. In other words, higher scores on the TAPAS composites should lead to lower probabilities of attrition. The multiple Rs for these composites ranged from .27 to .35 and the adjusted Rs ranged from .25 to .34 indicating that the TAPAS composites developed here were moderate predictors of Can-Do, Will-Do, and Attrition criteria in this sample of Military Police.

The largest effects were observed for the Can-Do criteria where the multiple R was .35. Not surprisingly, the Intellectual Efficiency scale was the best predictor of this criterion composite. However, consistent with the results in MOS 11B, the Physical Conditioning scale played a significant role in both the Will-Do and Attrition composites. This result reflects the physical nature of military training and performance in MOS 31B.

Table 15. Standardized Regression Weights for the TAPAS Facets in each Composite for MOS 31B

	Criteria		
TAPAS Facet	Can-Do	Will-Do	Attrition[a]
TAPAS: Achievement			
TAPAS: Adjustment	.07		-.24
TAPAS: Cooperation			.16
TAPAS: Dominance		.14	.21
TAPAS: Even Tempered			
TAPAS: Attention Seeking			
TAPAS: Selflessness	-.13		.21
TAPAS: Intellectual Efficiency	.25		
TAPAS: Non-delinquency			
TAPAS: Order	-.12		
TAPAS: Physical Conditioning		.14	-.32
TAPAS: Self-Control			
TAPAS: Sociability	-.13		.16
TAPAS: Tolerance			.28
TAPAS: Optimism		.13	
Multiple R	.35	.27	.27
Adjusted Multiple R	.34	.25	N/A

[a] Because standardized weights are not available in logistic regression, the regression weights reported for the TAPAS Attrition composite are the unstandardized coefficients.

As we did in MOS 11B, we used the composites shown in Table 15 to calculate the predicted scores on all three of the criterion composites for each individual in MOS 31B. Table 16 shows the significant correlations between these predicted scores and the various criteria measured in this dataset. As shown here, the predicted scores on Can-Do, Will-Do, and Attrition criteria were significantly correlated with a number of outcomes. Again, the TAPAS composite for the Will-Do criterion showed the largest number of correlations across the three criteria. This is not surprising given the breadth of the Will-Do criterion. However, the TAPAS composites for the Can-Do and Attrition criteria were also significantly correlated with a number of outcomes. For comparison, correlations between the predicted scores from the TAPAS composites and the Skilled Technical Aptitude Area (AA) composite used to select Military Police are also included. As expected, the Skilled Technical AA composite was most highly correlated with the TAPAS Can-Do composite. Correlations between the TAPAS composites and the ALQ and performance rating subscales are provided in the Appendix.

Table 16. Significant Correlations Between the Criterion Measures and the Predicted Scores on the TAPAS Composites in MOS 31B

	Predicted Scores on 31B Composites		
Criteria	Can-Do TAPAS Composite	Will-Do TAPAS Composite	Attrition TAPAS Composite
Skilled Technical Aptitude Area Composite	.38	.04	-.11
Can-Do Criterion Composite	.35		-.14
MOS-Specific Job Knowledge Test	.34		-.12
Army-Wide Job Knowledge Test	.26		-.13
Will-Do Criterion Composite		.27	
APFT Scores		.24	-.13
Overall ALQ		.11	.09
Performance Ratings			
MOS-Specific Ratings			
Training Achievement		.17	
Training Failure	-.10	-.18	.11
Disciplinary Incidents		-.16	
6-Month Attrition			.19[a]

[a] This value is based on the Pearson correlation between the predicted score and attrition. Due to the dichotomous attrition variable, this value was expected to be lower than the multiple R in Table 15 which was based on logistic regression.

Figure 4 illustrates the practical importance of these relationships for performance in MOS 31B. These graphs examine the same outcomes explored in Figure 3 and, therefore, provide a point of comparison with 11B. On the X-axes are quintiles for the predicted scores from the Can-Do, Will-Do, or Attrition composites. On the Y-axes are scores on the criterion variables. Because attrition and disciplinary incidents were dichotomous variables, the Y-axes for these graphs represent the percentage of individuals in each quintile that left the Army or were involved in disciplinary incidents. Again, note that attrition and disciplinary incidents are negatively related to the TAPAS composites described above. Therefore, lower TAPAS scores (i.e., the bottom quintiles) should lead to higher percentages of attrition and disciplinary incidents. The Y-axes for APFT and job knowledge plots are scaled to range from +/- 1 standard deviation from the mean of the criterion.

As shown in Figure 4, TAPAS was useful for differentiating high scores on the APFT and MOS-specific job knowledge test. Test-takers with predicted scores in the bottom 20% on the TAPAS Will-Do composite had an average score that was 22 points lower on the APFT than those in the highest 20%. Similarly, test-takers with scores in the lowest quintile for the Can-Do composite scored on average nearly a full standard deviation (8 points) lower on the job knowledge test for 31B than those in the highest quintile. In contrast, the quintile plots for disciplinary incidents and 6-month attrition did not seem to indicate a strict linear relationship. In

other words, the percentages of individuals leaving the Army or involved in disciplinary incidents did not decrease monotonically as their predicted scores increased. These results are likely due to the relatively small sample size in this MOS and should be considered preliminary until they can be verified in larger samples. However, although these findings were not as clear as those for other outcomes and in other MOS, there are still important practical differences between the highest and lowest quintiles on the TAPAS composites. Individuals in the upper quintiles of the Attrition and Will-Do composites were 83% less likely to leave the Army and 73% less likely to be involved in disciplinary incidents, respectively, relative to their peers in the lowest quintiles. Overall, the effects of the TAPAS composites in 31B appear to be positive with significant correlations with Army outcomes and important practical implications.

Table 17 illustrates the incremental validity of the TAPAS composites in MOS 31B. Consistent with our approach in MOS 11B, the Skilled Technical AA composite was included in Step 1 of the hierarchical analysis and the TAPAS scales were added in Step 2. As expected, the TAPAS did not contribute substantially to the prediction of Can-Do criteria when the Skilled Technical AA composite was already in the model. Although the change in the multiple R was significant, the size of the effect was small. In contrast, the TAPAS composites did provide incremental validity for predicting Will-Do criteria and attrition. Adding the TAPAS composites to the regression equations increased the multiple R's by .18 and .27, respectively, for Will-Do and attrition. These results indicate that the TAPAS composites developed in this MOS can contribute to the prediction of important criteria even after controlling for the MOS qualification measure that is currently used. Most notably, the AA composite that is currently used was uncorrelated with attrition in this MOS but adding the TAPAS Attrition composite increased the multiple correlation by .27.

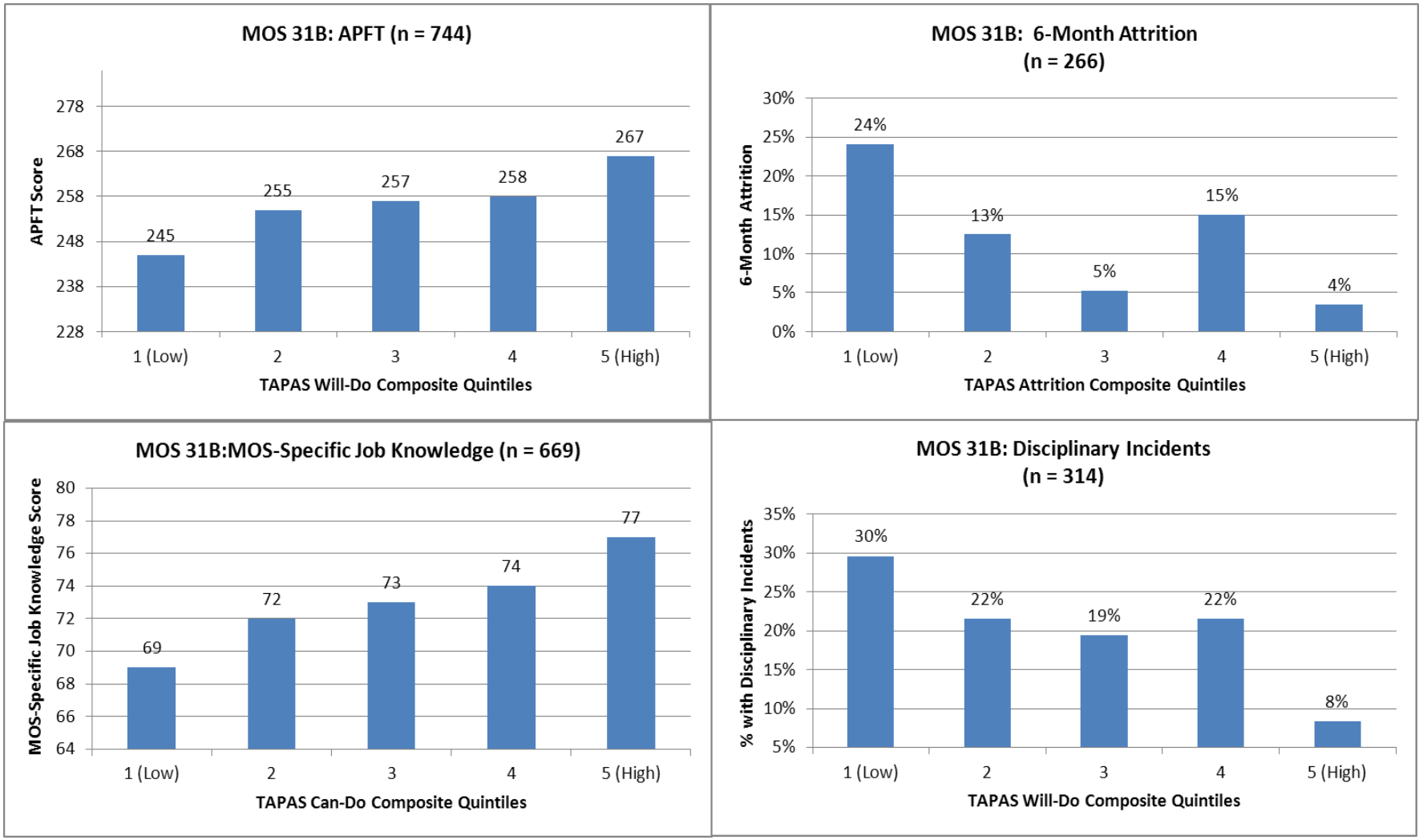

Figure 4. TAPAS Composite Quintile Plots for APFT scores, 6-Month Attrition, MOS-Specific Job Knowledge Scores, and Disciplinary Incidents in MOS 31B

Table 17. Hierarchical Regression Results and Standardized Regression Weights for Predicting the Can-Do, Will-Do, and Attrition Criterion Composites in MOS 31B

	Criteria		
Predictors	Can-Do Criterion Composite	Will-Do Criterion Composite	Attrition Criterion Composite[a]
Step 1			
Skilled Technical Aptitude Area Composite	.61	.11	.00
Multiple R	.61	.11	.00
Step 2			
Skilled Technical Aptitude Area Composite	.57	.10	.01
TAPAS: Achievement			
TAPAS: Adjustment	.03		-.25
TAPAS: Cooperation			.16
TAPAS: Dominance		.14	.21
TAPAS: Even Tempered			
TAPAS: Attention Seeking			
TAPAS: Selflessness	-.07		.12
TAPAS: Intellectual Efficiency	.03		
TAPAS: Non-delinquency			
TAPAS: Order	-.03		
TAPAS: Physical Conditioning		.13	-.32
TAPAS: Self-Control			
TAPAS: Sociability	-.07		.17
TAPAS: Tolerance			.28
TAPAS: Optimism		.13	
Multiple R	.62	.29	.27
Change in Multiple R	.01*	.18*	.27*

[a] Because standardized weights are not available in logistic regression, the regression weights reported for the TAPAS Attrition composite are the unstandardized coefficients.

PREDICTIVE VALIDITY: MOS 68W (COMBAT MEDICS)

Table 18 shows the descriptive statistics for the TAPAS scales and the criterion composites in MOS 68W. Again, raw dimension scores were normed and transformed into standardized scores within each version, so a score of, say, + 1.0 meant that an examinee was 1.0 SD above the mean with respect to the norm group. In other words, departures from the mean of zero indicate differences between this group and the Army-wide sample of applicants used for norming. As such, Table 18 suggests that the Combat Medics in this sample had higher mean scores on Intellectual Efficiency, Even-Temperedness, and Attention Seeking but a lower mean score on the Order facet relative to the Army-wide sample used for norming the TAPAS scores. Table 19 shows the correlations among the TAPAS facets and each of the criteria in the dataset, including the three criterion composites created for these analyses. Correlations between the TAPAS facets and each of the ALQ and performance rating subscales are provided in the Appendix for MOS 68W.

Table 18. Descriptive Statistics for the TAPAS Scales and Criterion Composites in MOS 68W

TAPAS Scales	N	Raw Mean	Raw Standard Deviation	Normed[a] Mean	Normed[a] Standard Deviation
TAPAS: Achievement	3,292	.16	.47	.12	.98
TAPAS: Adjustment	3,251	.00	.57	.04	1.01
TAPAS: Cooperation	3,292	-.05	.38	.03	.99
TAPAS: Dominance	3,292	-.01	.58	.03	1.01
TAPAS: Even Tempered	3,292	.17	.48	.13	.95
TAPAS: Attention Seeking	3,292	-.23	.53	.13	.96
TAPAS: Selflessness	3,292	-.18	.44	.08	1.03
TAPAS: Intellectual Efficiency	3,292	-.11	.56	.29	.93
TAPAS: Non-delinquency	3,292	.10	.45	.07	.97
TAPAS: Order	3,292	-.40	.54	-.16	.99
TAPAS: Physical Conditioning	3,292	-.01	.59	.03	.99
TAPAS: Self-Control	3,251	.03	.53	-.05	.99
TAPAS: Sociability	3,292	-.05	.57	.01	.98
TAPAS: Tolerance	3,292	-.24	.56	.08	.98
TAPAS: Optimism	3,292	.18	.45	.03	.99
Criterion Composites					
Will-Do Criterion	312	-.40	4.54	[b]	[b]
Can-Do Criterion	892	.40	1.53	[b]	[b]
6-month Attrition	987	.08	.28	[b]	[b]

[a] TAPAS scores were standardized based on a norming sample of 60,485 Army examinees who completed TAPAS between May 2009 and May 2010.
[b] Will-Do, Can-Do, and Attrition composites were not normed and, therefore, only the raw scores are reported.

Table 19. Correlations Between the TAPAS Facet Scales and Each Criterion in MOS 68W

	TAPAS Facets														
Criteria	Achievement	Adjustment	Cooperation	Dominance	Even-Tempered	Attention-Seeking	Selflessness	Intellectual Efficiency	Non-Delinquency	Order	Physical Conditioning	Self-Control	Sociability	Tolerance	Optimism
Will-Do Criterion Composite	**.19**	-.06	.08	.01	.08	-.01	.09	.04	.08	.00	**.31**	-.04	.03	.04	.05
APFT Scores	**.07**	.00	.02	.05	-.05	.03	.06	.01	**-.07**	-.05	**.29**	-.01	.04	.03	.05
Overall ALQ	**.10**	.03	**.07**	**.08**	.06	.02	.03	.03	.04	-.03	-.04	-.02	.02	.05	.03
Performance Ratings	.08	-.01	.03	.00	-.05	-.03	.00	.01	.04	.08	**.12**	.00	.02	-.03	-.02
MOS-Specific Ratings	.07	-.02	.03	-.06	-.02	-.05	.02	-.05	**.16**	.07	.06	.08	-.03	.03	.01
Training Achievement	.09	.03	-.01	.10	-.03	.06	-.01	.04	-.03	-.04	.16	-.03	.02	-.03	.06
Training Failure	**-.11**	-.05	.01	**-.09**	.00	**-.07**	.05	**-.14**	.03	.04	**-.18**	.01	-.02	**.07**	-.04
Disciplinary Incidents	-.01	**.15**	-.04	-.01	**-.09**	-.02	-.04	-.03	**-.10**	.06	**-.09**	.00	.03	.00	.05
Can-Do Criterion Composite	.01	.05	.00	.01	.03	-.03	-.02	**.15**	-.06	-.06	-.06	.00	**-.09**	.02	-.02
MOS-Specific Job Knowledge Test	.00	.03	.01	-.01	.00	-.04	-.01	**.10**	-.06	-.05	-.08	-.04	**-.10**	.05	-.03
Army-Wide Job Knowledge Test	.01	.05	.00	.03	.05	-.01	-.03	**.16**	-.03	-.06	-.02	.04	**-.07**	-.01	.00
6-month Attrition	-.02	-.06	.01	-.02	**-.07**	-.02	.04	.00	.00	-.01	-.06	.00	.03	.02	-.03

Note. Bold values are significant at the .05 level.

The scales comprising the TAPAS composites for the Can-Do, Will-Do, and Attrition criteria in MOS 68W are indicated in Table 20. As noted previously, the values presented in this table for the Can-Do and Will-Do composites represent the standardized regression weights for each of the TAPAS facets that were significant predictors of the criterion composite. However, because standardized weights are not available for logistic regression, the regression coefficients for the Attrition composite are the unstandardized values. Note that the Attrition variable is also coded in the opposite direction of the Can-Do and Will-Do composites. In other words, higher scores on the TAPAS composites should lead to lower probabilities of attrition. The multiple Rs for these composites ranged from .18 to .37 and the adjusted Rs ranged from .18 to .36 indicating that the TAPAS composites developed here were moderate predictors of performance for Medics.

Consistent with results in 11B, Will-Do criteria were predicted best by the TAPAS composite. The multiple R for the TAPAS Will-Do composite was nearly twice as large as the R for Can-Do or Attrition. Again, Physical Conditioning was one of the strongest predictors of both Will-Do and Attrition. Thus, despite differences in the composites across MOS, the Physical Conditioning scale appears to be a consistent predictor for each group.

Table 20. Standardized Regression Weights for the TAPAS Facets in Each Composite for MOS 68W

	Criteria		
TAPAS Facets	**Can-Do**	**Will-Do**	**Attrition[a]**
TAPAS: Achievement		.14	
TAPAS: Adjustment			-.20
TAPAS: Cooperation			
TAPAS: Dominance			
TAPAS: Even Tempered			-.23
TAPAS: Attention Seeking			
TAPAS: Selflessness			
TAPAS: Intellectual Efficiency	.15		
TAPAS: Non-delinquency			
TAPAS: Order	-.07		
TAPAS: Physical Conditioning		.32	-.24
TAPAS: Self-Control			
TAPAS: Sociability	-.10		.21
TAPAS: Tolerance			
TAPAS: Optimism			
Multiple R	.19	.37	.18
Adjusted Multiple R	.18	.36	N/A

[a] Because standardized weights are not available in logistic regression, the regression weights reported for the TAPAS Attrition composite are the unstandardized coefficients.

Using the TAPAS composites illustrated in Table 20, we calculated the predicted scores on all three composites for each individual in MOS 68W. Table 21 shows the significant zero-order correlations between these predicted scores and the criteria measured in this dataset. Again, these composites were significantly correlated with a number of outcomes. Correlations between the TAPAS composites and the ALQ and performance rating subscales are provided in the Appendix.

Table 21. Significant Correlations Between the Criterion Measures and the Predicted Scores on the TAPAS Composites in MOS 68W

	Predicted Scores on 68W Composites		
Criteria	Can-Do TAPAS Composite	Will-Do TAPAS Composite	Attrition TAPAS Composite
Skilled Technical Aptitude Area Composite	.34		-.12
Can-Do Criterion Composite	.19		
MOS-Specific Job Knowledge Test	.15	-.07	
Army-Wide Job Knowledge Test	.19		
Will-Do Criterion Composite		.37	
APFT Scores		.29	-.09
Overall ALQ			
Performance Ratings		.13	
MOS-Specific Ratings			
Training Achievement		.17	-.07
Training Failure	-.11	-.20	.10
Disciplinary Incidents	-.12		
6-Month Attrition			.13[a]

[a] This value is based on the Pearson correlation between the predicted score and attrition. Due to the dichotomous attrition variable, this value was expected to be lower than the multiple R in Table 20 which was based on logistic regression.

For comparison, quintile plots with MOS-specific job knowledge, 6-month attrition, Army Physical Fitness Test (APFT) scores, and disciplinary incidents are provided in Figure 5 to illustrate the practical importance of these TAPAS composites. As shown here, TAPAS was useful for predicting high performance on the APFT. Test-takers with predicted scores that were in the bottom 20% on the TAPAS Will-Do composite averaged 23 points less on the APFT than those in the highest 20%. In contrast, TAPAS had a much smaller effect on the MOS-specific job knowledge test. Despite the lower magnitude of the effect, test-takers with scores in the lowest quintile for the Can-Do composite still had average scores on the MOS-specific job knowledge test that were 2 points lower than those in the highest quintile. Given the scaling of this measure, this means that Soldiers in the highest quintile scored more than half a standard deviation higher on average than those in the lowest quintile. On the Attrition composite, 16% of individuals in the lowest quintile left the Army whereas only 4% of those in the highest quintile did. Similarly, only 18% of individuals with the highest predicted scores on the TAPAS Will-Do composite were involved in disciplinary incidents compared with 33% of those with the lowest predicted scores. Based on these results, it appears that the TAPAS composites developed here have important implications for performance in MOS 68W.

Table 22 illustrates the incremental validity of the TAPAS composites in MOS 68W. As expected, the TAPAS did not contribute substantially to the prediction of Can-Do criteria when the Skilled Technical AA composite was already in the model. The effect was small and the change in the multiple R was not significant. In contrast, the TAPAS composites did provide incremental validity for predicting Will-Do criteria and attrition. Adding the TAPAS composites to the regression equations for these criteria increased the multiple R's by .28 and .09 for Will-Do and Attrition, respectively. Thus, consistent with our analyses in other MOS, the TAPAS composites provided incremental validity over the AA composite that is currently used for qualification into MOS 68W.

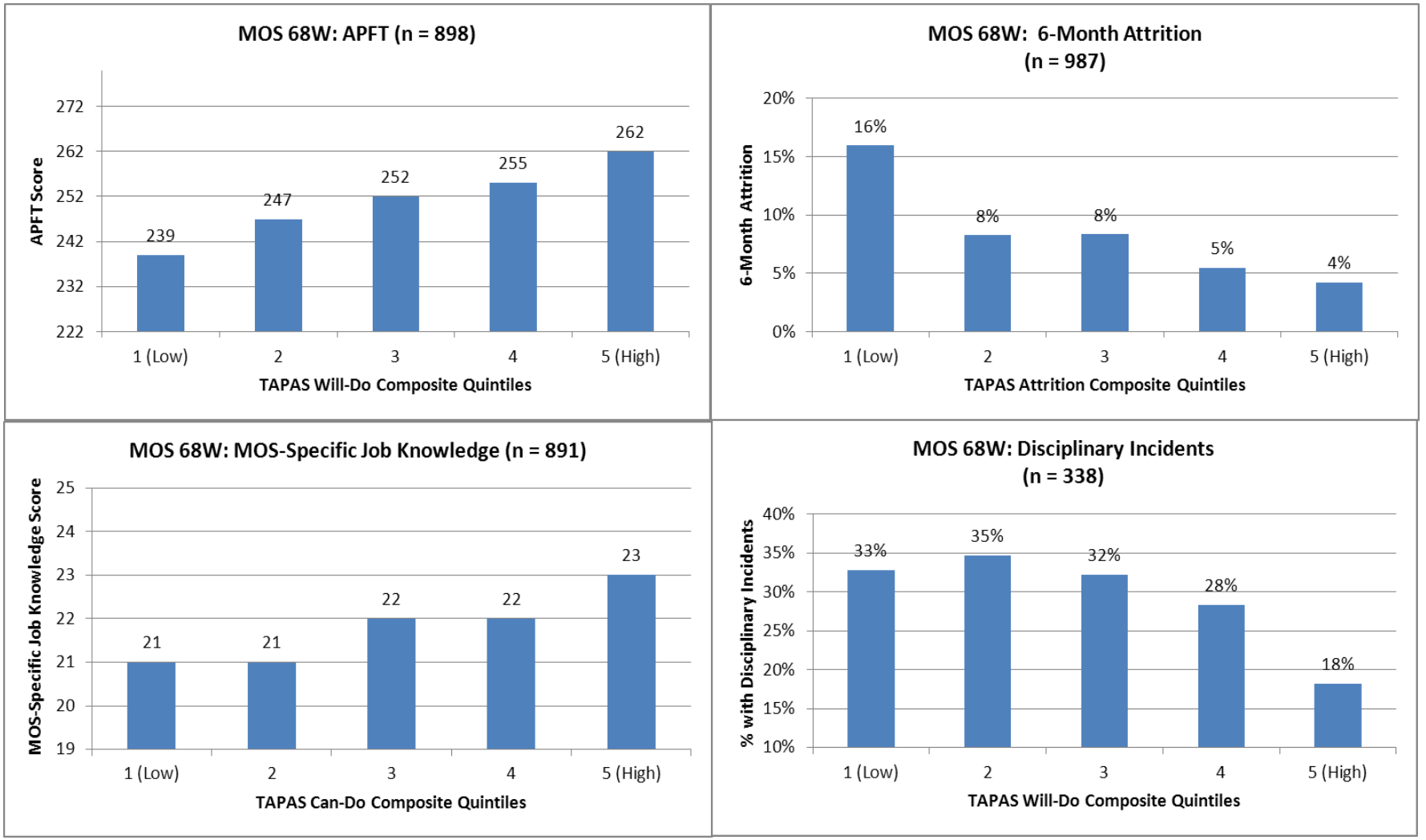

Figure 5. TAPAS Composite Quintile Plots for APFT scores, 6-Month Attrition, MOS-Specific Job Knowledge Scores, and Disciplinary Incidents in MOS 68W

Table 22. Hierarchical Regression Results and Standardized Regression Weights for Predicting the Can-Do, Will-Do, and Attrition Criterion Composites in MOS 68W

	Criteria		
Predictors	Can-Do Criterion Composite	Will-Do Criterion Composite	Attrition Criterion Composite[a]
Step 1			
Skilled Technical Aptitude Area Composite	.43	.11	-.03
Multiple R	.43	.11	.11
Step 2			
Skilled Technical Aptitude Area Composite	.41	.12	-.03
TAPAS: Achievement		.13	
TAPAS: Adjustment			-.18
TAPAS: Cooperation			
TAPAS: Dominance			
TAPAS: Even Tempered			-.22
TAPAS: Attention Seeking			
TAPAS: Selflessness			
TAPAS: Intellectual Efficiency	.03		
TAPAS: Non-delinquency			
TAPAS: Order	-.03		
TAPAS: Physical Conditioning		.33	-.24
TAPAS: Self-Control			
TAPAS: Sociability	-.05		.17
TAPAS: Tolerance			
TAPAS: Optimism			
Multiple R	.43	.39	.20
Change in Multiple R	.004	.28*	.09*

[a] Because standardized weights are not available in logistic regression, the regression weights reported for the TAPAS Attrition composite are the unstandardized coefficients.

PREDICTIVE VALIDITY: MOS 88M (MOTOR TRANSPORT OPERATOR)

Table 23 shows the descriptive statistics for the TAPAS scales and the criterion composites in MOS 88M. As with the other MOS, raw dimension scores were normed and transformed into standardized scores within each version, so a score of, say, + 1.0 meant that an examinee was 1.0 SD above the mean with respect to the norm group. In other words, departures from the mean of zero indicate differences between this group and the Army-wide sample of applicants used for norming. As such, Table 23 suggests that the Motor Transport Operators in this sample had average scores that were similar to the means in the overall sample on most of the TAPAS dimensions. Table 24 shows the correlations among the TAPAS facets and each of the criteria in the dataset, including the three criterion composites created for these analyses. Additional correlations between the TAPAS facets and the ALQ and performance rating subscales are provided in the Appendix.

Table 23. Descriptive Statistics for the TAPAS Scales and Criterion Composites in MOS 88M

TAPAS Facets	N	Raw Mean	Raw Standard Deviation	Normed[a] Mean	Normed[a] Standard Deviation
TAPAS: Achievement	2,872	.16	.47	-.01	.96
TAPAS: Adjustment	2,795	.00	.57	-.03	.98
TAPAS: Cooperation	2,872	-.05	.38	.04	.99
TAPAS: Dominance	2,872	-.01	.58	-.07	.97
TAPAS: Even Tempered	2,872	.17	.48	-.01	.97
TAPAS: Attention Seeking	2,872	-.23	.53	-.04	.98
TAPAS: Selflessness	2,872	-.18	.44	.04	.99
TAPAS: Intellectual Efficiency	2,872	-.11	.56	-.14	.94
TAPAS: Non-delinquency	2,872	.10	.45	.03	.98
TAPAS: Order	2,872	-.40	.54	.04	.97
TAPAS: Physical Conditioning	2,872	-.01	.59	-.02	.94
TAPAS: Self-Control	2,795	.03	.53	-.06	.99
TAPAS: Sociability	2,872	-.05	.57	.03	.94
TAPAS: Tolerance	2,872	-.24	.56	-.03	.96
TAPAS: Optimism	2,872	.18	.45	.06	.95
Criterion Composites					
Will-Do Criterion	131	-.72	4.72	[b]	[b]
Can-Do Criterion	563	-.18	1.72	[b]	[b]
6-month Attrition	653	.12	.32	[b]	[b]

[a] TAPAS scores were standardized based on a norming sample of 60,485 Army examinees who completed TAPAS between May 2009 and May 2010.
[b] Will-Do, Can-Do, and Attrition composites were not normed and, therefore, only the raw scores are reported.

Table 24. Correlations Between the TAPAS Facet Scales and Each Criterion in MOS 88M

	TAPAS Facets														
Criteria	Achievement	Adjustment	Cooperation	Dominance	Even-Tempered	Attention-Seeking	Selflessness	Intellectual Efficiency	Non-Delinquency	Order	Physical Conditioning	Self-Control	Sociability	Tolerance	Optimism
Will-Do Criterion Composite	.07	.07	.02	.15	.03	.06	-.14	-.01	.08	-.05	.16	.07	.01	.12	.09
APFT Scores	.03	.04	-.01	.05	-.04	**.09**	-.01	.06	-.07	.00	**.21**	-.01	.05	.00	**.09**
Overall ALQ	.04	.02	.04	.08	.05	-.02	**.10**	-.05	.05	.02	-.03	**.10**	-.01	**.11**	.04
Performance Ratings	.07	-.08	.04	-.03	-.03	-.02	.01	-.03	.09	-.04	.06	.00	.14	**.20**	.04
MOS-Specific Ratings	-.02	-.04	.03	.06	-.09	.03	-.09	-.06	-.01	-.01	.03	.06	.02	**.22**	.08
Training Achievement	.05	-.07	-.04	.04	**-.09**	.02	-.01	-.03	-.01	.07	**.08**	-.03	-.01	-.03	.01
Training Failure	-.07	-.06	-.02	**-.11**	-.02	-.01	.00	**-.13**	.01	.03	**-.08**	-.04	-.02	.04	-.01
Disciplinary incidents	-.07	.01	-.05	-.09	-.13	.06	-.08	**.15**	**-.18**	.03	-.04	-.09	.02	-.06	-.02
Can-Do Criterion Composite	.06	**.10**	-.04	.04	.00	.04	**-.09**	**.25**	**-.09**	**-.13**	**-.10**	-.08	**-.09**	**-.15**	-.01
MOS-Specific Job Knowledge Test	.07	.08	-.02	.01	.01	-.01	-.05	**.23**	-.03	**-.12**	**-.11**	-.07	-.07	**-.14**	-.02
Army-Wide Job Knowledge Test	.03	**.10**	-.04	.06	-.01	.08	**-.11**	**.23**	**-.13**	**-.12**	-.07	-.07	-.09	**-.14**	.01
6-month Attrition	.01	-.01	-.04	-.04	-.02	.03	.06	-.01	**.09**	.08	-.07	.07	.01	.06	-.06

Note. Bold values are significant at the .05 level.

The scales comprising the TAPAS composites for the Can-Do, Will-Do, and Attrition criteria in MOS 88M are shown in Table 25. The values presented in this table for the Can-Do and Will-Do composites represent the standardized regression weights for each of the TAPAS facets that were significant predictors of the criterion composite. However, because standardized weights are not available for logistic regression, the regression coefficients for the Attrition composite are the unstandardized values. As noted previously, the Attrition variable is also coded in the opposite direction of the Can-Do and Will-Do composites. In other words, higher scores on the TAPAS composites should lead to lower probabilities of attrition. The multiple Rs for these composites ranged from .18 to .37 and the adjusted Rs ranged from .24 to .35 indicating that the TAPAS composites developed here were moderate predictors of performance in MOS 88M.

As shown in Table 25, Can-Do performance was predicted well by the TAPAS composite. The multiple R for the Will-Do criterion was also .31 and the multiple R for the Attrition composite was .18. Thus, all three criteria were predicted moderately well. Again, the TAPAS Physical Conditioning scale was the only scale that was included in all three composites, reflecting the importance of fitness in military training.

Table 25. Standardized Regression Weights for the TAPAS Facets in Each Composite for MOS 88M

	Criteria		
TAPAS Facet	**Can-Do**	**Will-Do**	**Attrition[a]**
TAPAS: Achievement			
TAPAS: Adjustment	.05		
TAPAS: Cooperation			
TAPAS: Dominance		.15	
TAPAS: Even Tempered			
TAPAS: Attention Seeking			
TAPAS: Selflessness	-.04	-.22	
TAPAS: Intellectual Efficiency	.26	-.06	
TAPAS: Non-delinquency	-.10		.24
TAPAS: Order	-.13		.19
TAPAS: Physical Conditioning	-.11	.14	-.20
TAPAS: Self-Control			.13
TAPAS: Sociability	-.10		
TAPAS: Tolerance	-.13	.14	
TAPAS: Optimism			
Multiple R	.37	.31	.18
Adjusted Multiple R	.35	.24	N/A

[a] Because standardized weights are not available in logistic regression, the regression weights reported for the TAPAS Attrition composite are the unstandardized coefficients.

Using the TAPAS composites shown in Table 25, we calculated the predicted scores on all three of these composites for each individual in MOS 88M. For comparison with the other MOS, Table 26 shows the significant zero-order correlations between these predicted scores and the various outcomes measured in this dataset. The TAPAS composites for the Can-Do, Will-Do, and Attrition criteria were significantly correlated with a number of outcomes. However, these results are somewhat limited by the sample size in this MOS. For example, the correlation between the TAPAS Will-Do composite and disciplinary incidents was -.14 but was not significant because it was based on only 193 respondents. Similarly, the correlation between the TAPAS Will-Do composite and performance ratings was .11 but was based on a sample size of only 131. Consequently, future analyses with larger samples may find somewhat different results. Correlations between the predicted scores from the TAPAS composites and the Operator and Food Service (OFS) Aptitude Area (AA) composite used to select Transport Operators are also included. As expected, the OFS AA composite was most highly correlated with the TAPAS

Can-Do composite. Correlations between the TAPAS composites and the ALQ and performance rating subscales are provided in the Appendix.

Table 26. Significant Correlations Between the Criterion Measures and the Predicted Scores on the TAPAS Composites in MOS 88M

	Predicted Scores on 88M Composites		
Criteria	Can-Do TAPAS Composite	Will-Do TAPAS Composite	Attrition TAPAS Composite
Operator and Food Service Aptitude Area Composite	.35		-.08
Can-Do Criterion Composite	.37	-.10	
MOS-Specific Job Knowledge Test	.32	-.12	
Army-Wide Job Knowledge Test	.35		-.10
Will-Do Criterion Composite		.31	
APFT Scores		.11	-.13
ALQ	-.09		
Performance Ratings			
MOS-Specific Ratings		.23	
Training Achievement			
Training Failure	-.09		
Disciplinary Incidents	.19		
6-Month Attrition			.12[a]

[a] This value is based on the Pearson correlation between the predicted score and attrition. Due to the dichotomous attrition variable, this value was expected to be lower than the multiple R in Table 25 which was based on logistic regression.

Figure 6 illustrates the practical importance of these relationships. For comparison with Figures 3 to 5, quintile plots are provided for MOS-specific job knowledge, 6-month attrition, Army Physical Fitness Test (APFT) scores, and disciplinary incidents. On the X-axes of these plots are the quintiles for the predicted scores from the Can-Do, Will-Do, or Attrition composites. On the Y-axes are scores on the APFT and MOS-specific job knowledge test and percentages of attrition and disciplinary incidents. Again, note that attrition and disciplinary incidents are negatively related to the TAPAS composites described above. Therefore, lower predicted scores (i.e., the bottom quintiles) should lead to higher percentages of attrition and disciplinary incidents. In contrast, we expect individuals in the bottom quintile to score lower on the APFT and job knowledge tests. The Y-axes for APFT and job knowledge plots are scaled to range from +/- 1 standard deviation from the mean of the criterion.

As shown in Figure 6, TAPAS was useful for differentiating high scores on the APFT and job knowledge test for 88M. Test-takers with predicted scores in the bottom 20% on the TAPAS Will-Do composite averaged 11 points less on the APFT than those in the highest 20% of predicted performers. Similarly, test-takers with scores in the lowest quintile for the Can-Do

composite averaged 7 points less on the job knowledge test for 88M than those in the highest quintile. This represents a difference of nearly a full standard deviation (SD = 8.142). In addition, 17% of Soldiers in the lowest quintile of the TAPAS Attrition composite left the Army while only 5% of those in the highest quintile ended their service. Finally, test-takers with predicted scores in the highest quintile on the TAPAS Will-Do composite were almost half as likely to be involved in disciplinary incidents as those in the lowest quintile (20% compared to 38%). In sum, although the significance of the correlations presented in Table 26 may have been affected by sample size, quintile plots of these relationships indicated that the TAPAS composites can have important effects on Army outcomes. Still, the small sample size in this group appeared to affect these graphs as well. For example, the plot for disciplinary incidents seems to show that individuals with predicted scores in the third quintile on the TAPAS Will-Do composite were more likely to be involved in disciplinary incidents than those in the second lowest quintile. However, it is important to consider that only about 46 people were included in each quintile of this plot because of the sample size. Despite the small sample, these plots still illustrate the practical importance of using the TAPAS composites for selecting Soldiers.

Table 27 illustrates the incremental validity of the TAPAS composites in MOS 88M. As in the other MOS, the TAPAS did not contribute substantially to the prediction of Can-Do criteria when the Operator and Food Service (OFS) AA composite was already in the model. Although the change in the multiple R was significant, the size of the effect was small. In contrast, the TAPAS composites did provide incremental validity for predicting Will-Do criteria and attrition. Adding the TAPAS composites to the regression equations for these criteria increased the multiple R's by .22 and .12 for Will-Do and Attrition, respectively. Thus, although the composites developed here are preliminary until larger sample sizes can be obtained, these results suggest that the TAPAS composites in MOS 88M can provide substantial incremental validity over the AA composite that is currently used for MOS qualification.

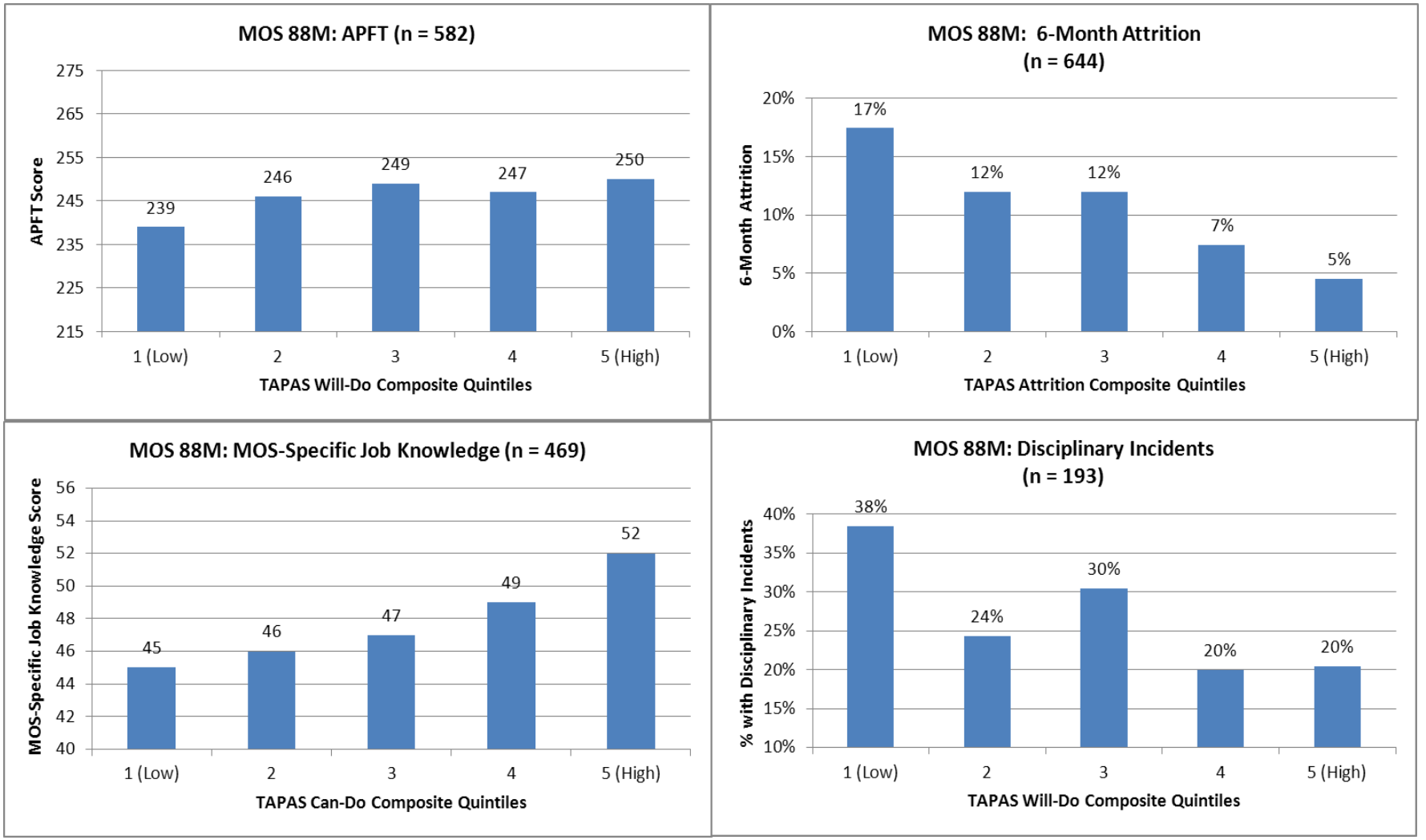

Figure 6. TAPAS Composite Quintile Plots for APFT scores, 6-Month Attrition, MOS-Specific Job Knowledge Scores, and Disciplinary Incidents in MOS 88M

Table 27. Hierarchical Regression Results and Standardized Regression Weights for Predicting the Can-Do, Will-Do, and Attrition Criterion Composites in MOS 88M

	Criteria		
Predictors	Can-Do Criterion Composite	Will-Do Criterion Composite	Attrition Criterion Composite[a]
Step 1			
Operator and Food Service Aptitude Area Composite	.66	.15	-.01
Multiple R	.66	.15	.07
Step 2			
Operator and Food Service Aptitude Area Composite	.62	.20	-.01
TAPAS: Achievement			
TAPAS: Adjustment	-.01		
TAPAS: Cooperation			
TAPAS: Dominance		.17	
TAPAS: Even Tempered			
TAPAS: Attention Seeking			
TAPAS: Selflessness	.01	-.23	
TAPAS: Intellectual Efficiency	.08	-.12	
TAPAS: Non-delinquency	-.06		.25
TAPAS: Order	.00		.18
TAPAS: Physical Conditioning	-.09	.13	-.20
TAPAS: Self-Control			.12
TAPAS: Sociability	-.04		
TAPAS: Tolerance	-.04	.17	
TAPAS: Optimism			
Multiple R	.67	.37	.19
Change in Multiple R	.01*	.22*	.12*

[a] Because standardized weights are not available in logistic regression, the regression weights reported for the TAPAS Attrition composite are the unstandardized coefficients.

MOS CLASSIFICATION

COMPARISONS ACROSS MOS

The primary objective of this research was to examine ways to improve MOS qualification. As such, the results reported above suggest that TAPAS may be useful for this purpose and can potentially improve the validity of the current qualification procedures. In this section, we also explore the potential for using TAPAS as a classification tool. A necessary, but not sufficient, condition for TAPAS to be used for MOS classification is that it predicts important aspects of performance in each MOS. Again, the results presented above indicate that this is the case. In this section we summarize findings from analyses assessing the usefulness of TAPAS for *differential classification*. Note that a selection tool is *not* useful for classification if it provides essentially the same rank-order of individuals across all jobs. In this case, it might be useful for selection into the Army, but with no differences in mean performance across jobs, no benefit would be obtained for classification. Thus, we first compared the TAPAS composites across MOS to ascertain the extent to which they yielded the same rank-ordering of individuals. We then explored the degree to which MOS-specific TAPAS composites identified Soldiers that might perform better in a different MOS than the one to which they are assigned.

WILL-DO COMPOSITES

The standardized regression weights for the facets comprising the TAPAS composites for the Will-Do criterion in each MOS are shown in Table 28. As shown there, some of the TAPAS facets were significantly related to will-do performance in all MOS. For example, the Physical Conditioning scale was predictive in each MOS. The consistency of this predictor is an indicator of the physical nature of these occupations and of the military training that was completed during this time frame. In contrast, other predictors were less consistent across occupations. Dominance was only included in 31B and 88M, Achievement was only significant in 11B and 68W, and Tolerance was only predictive in 88M. These differences are important because they indicate that TAPAS scales may be useful for differentiating individuals who will be successful in some MOS but not in others.

Table 28. Standardized Regression Weights for the TAPAS Facets Comprising the Will-Do Composites in Each MOS

	MOS-Specific Will-Do Composites			
TAPAS Facet	11B	31B	68W	88M
TAPAS: Achievement	.16		.14	
TAPAS: Adjustment				
TAPAS: Cooperation				
TAPAS: Dominance		.14		.15
TAPAS: Even Tempered				
TAPAS: Attention Seeking				
TAPAS: Selflessness				-.22
TAPAS: Intellectual Efficiency				-.06
TAPAS: Non-delinquency				
TAPAS: Order				
TAPAS: Physical Conditioning	.22	.14	.32	.14
TAPAS: Self-Control				
TAPAS: Sociability				
TAPAS: Tolerance				.14
TAPAS: Optimism	.08	.13		
Multiple R	.33	.27	.37	.31
Adjusted Multiple R	.32	.25	.36	.24

Using the weights provided in Table 28, predicted scores on each of these Will-Do composites were calculated for each individual in the total sample. Table 29 shows the correlations among these predicted scores. As shown here, some of the composite scores were highly correlated. For example, the correlation between scores on the Will-Do composites for 11B and those for 68W was .95. Thus, the rank-order of individuals based on these predicted scores will be similar. However, other correlations were much lower. The correlation between the scores on the 11B and 88M composites was only .47, indicating that these composites would result in rank-order differences across these jobs.

Table 29. Zero-Order Correlations Among the Predicted Scores from the TAPAS Will-Do Composites in the Total Sample

MOS	11B	31B	68W	88M
11B	1.00			
31B	.79	1.00		
68W	.95	.70	1.00	
88M	.47	.60	.51	1.00

Note. All correlations reported here were significant at the .05 level.

CAN-DO COMPOSITES

The standardized regression weights for the TAPAS facets comprising the Can-Do composites in each MOS are shown in Table 30. Again, the pattern of prediction differed across MOS. Not surprisingly, intellectual efficiency was a consistent predictor of Can-Do performance in all MOS. Again, individuals who score high on intellectual efficiency are able to process information efficiently and are considered knowledgeable and intellectual. Therefore, this scale should predict scores on the job knowledge tests that comprise the Can-Do criterion. Order was also a facet of the Can-Do composites in all MOS. In contrast, Selflessness was only included in 31B and Dominance, Even-Tempered, and Attention Seeking were only significant in 11B.

Table 30. Standardized Regression Weights for the TAPAS Facets Comprising the Can-Do Composites in Each MOS

	MOS-Specific Can-Do Composites			
TAPAS Facet	**11B**	**31B**	**68W**	**88M**
TAPAS: Achievement				
TAPAS: Adjustment		.07		.05
TAPAS: Cooperation				
TAPAS: Dominance	-.03			
TAPAS: Even Tempered	.05			
TAPAS: Attention Seeking	.09			
TAPAS: Selflessness		-.13		-.04
TAPAS: Intellectual Efficiency	.23	.25	.15	.26
TAPAS: Non-delinquency				-.10
TAPAS: Order	-.08	-.12	-.07	-.13
TAPAS: Physical Conditioning				-.11
TAPAS: Self-Control				
TAPAS: Sociability	-.09	-.13	-.10	-.10
TAPAS: Tolerance	-.05			-.13
TAPAS: Optimism				
Multiple R	.28	.35	.19	.37
Adjusted Multiple R	.27	.34	.18	.35

Again, these weights were used to calculate predicted scores for each individual in the total sample and the correlations among these scores are shown in Table 31. For the Can-Do composites, the predicted scores were strongly correlated across the four MOS we examined, with correlations ranging from .82 to .90. Thus, it appears that the Can-Do composites do not adequately differentiate among the high performers in each MOS.

Table 31. Zero-Order Correlations Among the Predicted Scores from the TAPAS Can-Do Composites in the Total Sample

MOS	11B	31B	68W	88M
11B	1.00			
31B	.86	1.00		
68W	.89	.90	1.00	
88M	.82	.86	.82	1.00

Note. All correlations reported here were significant at the .05 level.

ATTRITION

Finally, the regression weights for the TAPAS facets in the Attrition composites for each MOS are shown in Table 32. Again, Physical Conditioning played a significant role in all of these composites. However, given the differential patterns of relationships across MOS, results indicated that the TAPAS scales could be useful for classification. In fact, the correlations among the predicted scores in the total sample are provided in Table 33 and are the lowest of the three TAPAS composites developed here. These correlations ranged from .10 to .60, suggesting that the Attrition composites will result in substantial rank-order differences for each MOS. In other words, the Attrition composites may be the most useful for MOS classification.

Table 32. Regression Weights for the TAPAS Facets Comprising the Attrition Composites in Each MOS

	MOS-Specific Attrition Composites			
TAPAS Facet	**11B**	**31B**	**68W**	**88M**
TAPAS: Achievement				
TAPAS: Adjustment		-.24	-.20	
TAPAS: Cooperation		.16		
TAPAS: Dominance		.21		
TAPAS: Even Tempered			-.23	
TAPAS: Attention Seeking	-.18			
TAPAS: Selflessness		.21		
TAPAS: Intellectual Efficiency				
TAPAS: Non-delinquency				.24
TAPAS: Order	.15			.19
TAPAS: Physical Conditioning	-.41	-.32	-.24	-.20
TAPAS: Self-Control				.13
TAPAS: Sociability		.16	.21	
TAPAS: Tolerance		.28		
TAPAS: Optimism				
Multiple R	.22	.27	.18	.18

Table 33. Zero-Order Correlations Among the Predicted Scores from the TAPAS Attrition Composites in the Total Sample

MOS	11B	31B	68W	88M
11B	1.00			
31B	.33	1.00		
68W	.34	.47	1.00	
88M	.60	.28	.10	1.00

Note. All correlations reported here were significant at the .05 level.

PREDICTED MOS CLASSIFICATION

Given the predictive validity results reported above and the TAPAS composite differences across MOS, TAPAS appears to be useful for classification purposes. Therefore, we next examined the extent to which the TAPAS composites could improve the assignment of Soldiers to MOS. To answer this question, we used the composites described above to predict performance in MOS 11B, 31B, 68W, and 88M. We then compared predicted performance scores in the Soldier's current MOS to his or her performance potential in the other three MOS.

First, the standardized regression weights presented in Tables 28, 30, and 32 were used to calculate predicted scores on the Can-Do, Will-Do, and Attrition composites for each individual and for each MOS. In other words, every Soldier had three predicted criterion scores for each of the four MOS we examined here (i.e., 12 total predicted scores). Then, the predicted scores from the MOS-specific Can-Do, Will-Do, and Attrition composites were standardized and summed to get an overall MOS score that can be compared across 11B, 31B, 68W, and 88M. This score is the value that could be used to classify recruits into an MOS. Finally, we compared an individual's predicted performance for each MOS to the predicted performance score for his or her current MOS.

To illustrate the link between the overall predicted performance scores and actual performance in an individual's current MOS, Figure 7 plots the relationships between predicted performance and APFT scores, 6-month attrition, MOS-specific job knowledge scores, and disciplinary incidents. Because these relationships were already illustrated for the individual TAPAS composites in each of the MOS (e.g., see Figures 3-6), we only provide an illustration of these relationships with the overall predicted performance scores in the largest MOS (11B). Consistent with the graphs in Figures 3-6, a Soldier's predicted performance potential is closely associated with his or her actual performance on the job. For example, Soldiers with the highest predicted performance on the combined TAPAS composite averaged 18 points higher on the APFT than individuals predicted to be in the bottom 20% of performers. In addition, individuals with the highest performance potential scored four points, or nearly half a standard deviation (SD=8.39), higher on the MOS-specific job knowledge test, were 36% less likely to be involved in disciplinary incidents, and were 63% less likely to leave the Army. Thus, a Soldier's overall performance potential in his or her current MOS is consistent with observed performance on the job.

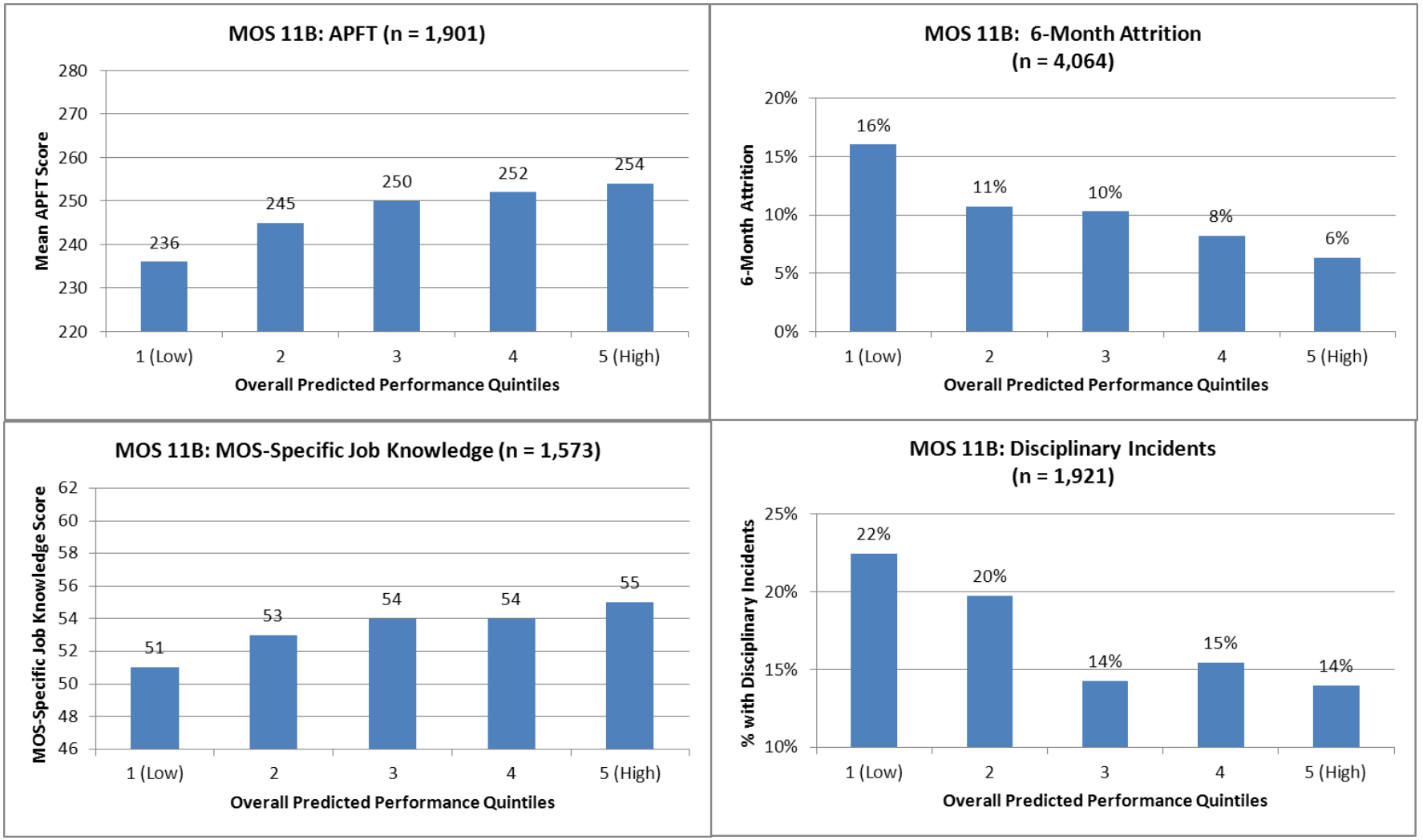

Figure 7. Comparisons of the Combined TAPAS Composite Scores with Observed Performance in MOS 11B

Figures 8 and 9 provide two additional ways to evaluate the quality of the overall composites. Again, these figures focus on MOS 11B because of the preliminary nature of the composites in other MOS. Figure 8 illustrates the potential effects of using the overall composite to select individuals into MOS 11B. Here, the overall composite was used to select out individuals with predicted performance scores in the bottom 10% for Infantry. In other words, Figure 8 illustrates the actual performance differences between individuals in the lowest 10% (i.e., the failing group) and those in the upper 90% (i.e., the passing group) of predicted scores. Results showed that there were important differences between these two groups. For example, the passing group averaged 14 points higher on the APFT. The passing group also had higher mean scores on the job knowledge test, was 55% less likely to leave the Army, and 26% less likely to be involved in disciplinary incidents. These results indicate that the TAPAS composites are useful for identifying potentially high performers in MOS 11B.

Figure 9 illustrates the same analyses for Infantry in AFQT categories IIIB and IV. Again, the TAPAS composites were used to identify individuals with predicted scores in the bottom 10% of this group. Figure 9 shows that selecting out the bottom 10% of IIIB/IV's would result in substantial differences in actual performance. For example, individuals that would have been selected out using the TAPAS composites (i.e., the failing group or individuals in the bottom 10% of predicted scores) were more than twice as likely as the passing group (i.e., the top 90% of predicted scores) to leave the Army. The passing group also had a higher mean score on the APFT and was less likely to be involved in disciplinary incidents. There were not substantial differences on the MOS-specific job knowledge tests but this was expected given the range restriction on cognitive ability in this group. Thus, these analyses suggest that the TAPAS composites will also be useful for identifying high potential candidates from AFQT categories IIIB and IV.

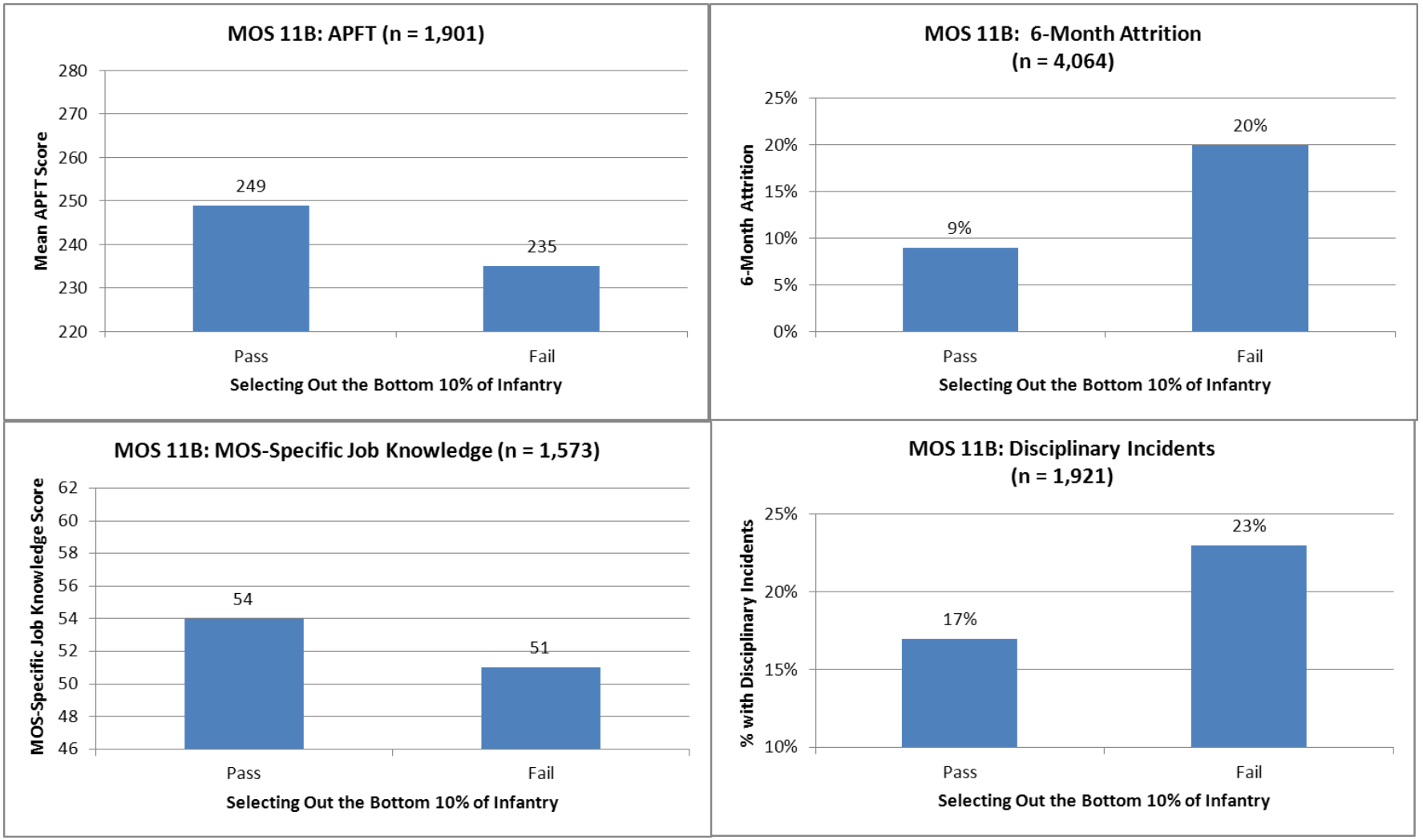

Figure 8. Pass/Fail Comparisons Selecting out the Bottom 10% of the Infantry using the Overall TAPAS Composite

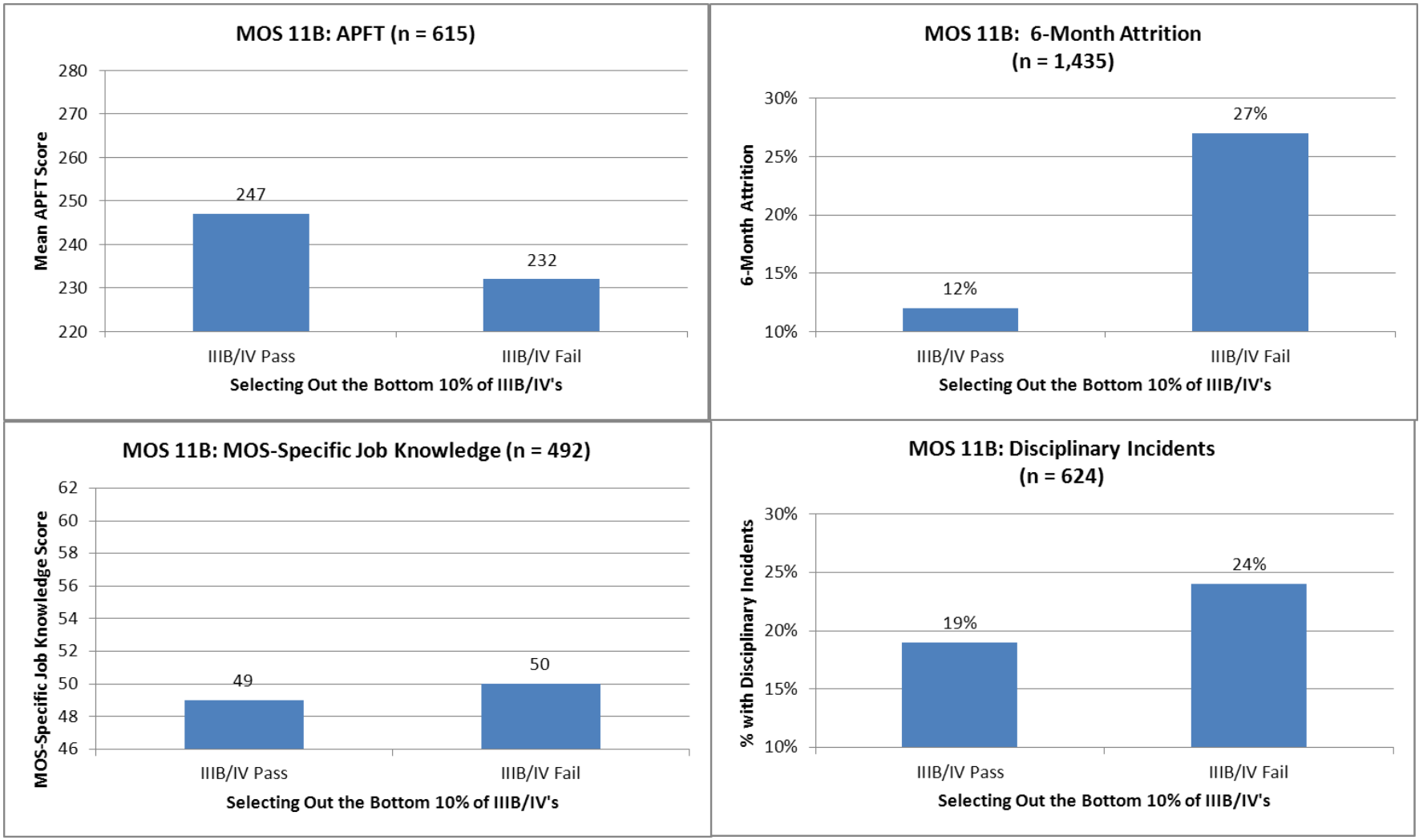

Figure 9. Pass/Fail Comparisons Selecting out the Bottom 10% of Individuals in AFQT Categories IIIB and IV using the Overall TAPAS Composite in MOS 11B

Table 34 shows the percentages of Soldiers who had their highest predicted score in an MOS (columns) other than their current MOS (rows). In other words, the percentages shown here illustrate the percent of individuals in each MOS with their highest potential for performance in one of the other MOS. Because some predicted score differences will be too small to have any practical importance, we report these percentages for Soldiers with predicted scores that were at least one half to one full standard deviation larger in another MOS than in their current MOS. The standard deviations for these composites ranged from approximately 1.88 to 2.20.

The results indicate that many Soldiers could potentially have been higher performers in a different MOS. For example, approximately 23% of individuals in MOS 11B had a predicted score on the 88M composite that was half a standard deviation higher than their score on the 11B composite. In addition, 11% had scores that were a full standard deviation (SD = 2.20) higher on the 88M composite. Across all MOS, 42% of Soldiers in MOS 11B had a predicted score that was at least half of a standard deviation higher in another MOS and 18% had predicted scores that were more than 1 standard deviation higher. Moreover, these results were similar across MOS—41% to 51% of individuals in each MOS had at least a .50 standard deviation difference between their highest predicted score in another MOS and their estimated performance in their current MOS.

These differences were also larger when only those with the lowest predicted scores in their current MOS were examined. For example, of the Soldiers with predicted performance scores in the bottom 20% for Infantry, 84% had predicted scores that were .50 standard deviations higher in another MOS and 54% had scores that were a full standard deviation higher in another MOS. In MOS 68W, these numbers were 77% and 52%, respectively. In other words, a substantial number of Soldiers who were predicted to perform poorly in their current MOS had a higher potential for performance in another MOS.

Figure 10 illustrates the potential advantages of using TAPAS scales for classification in the largest MOS (11B). This figure shows the observed performance differences between Soldiers that would have been classified into MOS 11B using the TAPAS composites and those that would have been placed in one of the other MOS examined here. Individuals classified into MOS 11B using the TAPAS composites were 36% less likely to leave the Army than those who were predicted to perform better in a different MOS. In addition, those that would have been classified into a different MOS generally scored lower on the APFT and the MOS-specific job knowledge tests and were involved in 30% more disciplinary incidents.

Overall, it is clear that a number of individuals were predicted to perform better in a different MOS than the one to which they were assigned. In most cases, around 41-51% of Soldiers in a particular MOS would have been classified into a different MOS using the TAPAS composites. In addition, around 18 to 25% of the total sample in an MOS was predicted to perform one full standard deviation higher in another MOS. Given the validity results reported above and the performance difference illustrated in Figure 8, these results appear to have important potential implications for MOS classification.

It should be noted that the approach used here to examine classification was necessarily simplified and did not consider other factors in the classification process such as Soldier preference, the personnel needs of each MOS, or the availability of training seats in each MOS. These factors affect the accuracy of the current classification process and, therefore, would also mitigate the impact of using TAPAS for MOS classification. Nevertheless, the results presented here illustrate the potential gains in performance that can be obtained by using the TAPAS.

Table 34. Percent of Individuals with their Highest Predicted Score in an MOS other than their Current MOS

	Alternative Possible MOS								Total % with their Highest Predicted Score in Another MOS	
	11B		31B		68W		88M			
Current MOS	.50 SD	1 SD	.50 SD	1 SD	.50 SD	1 SD	.50 SD	1 SD	.50 SD	1 SD
11B	N/A	N/A	8%	3%	11%	3%	23%	11%	42%	18%
31B	14%	4%	N/A	N/A	16%	5%	21%	9%	51%	18%
68W	10%	2%	7%	2%	N/A	N/A	25%	15%	41%	19%
88M	18%	10%	9%	4%	18%	11%	N/A	N/A	45%	25%

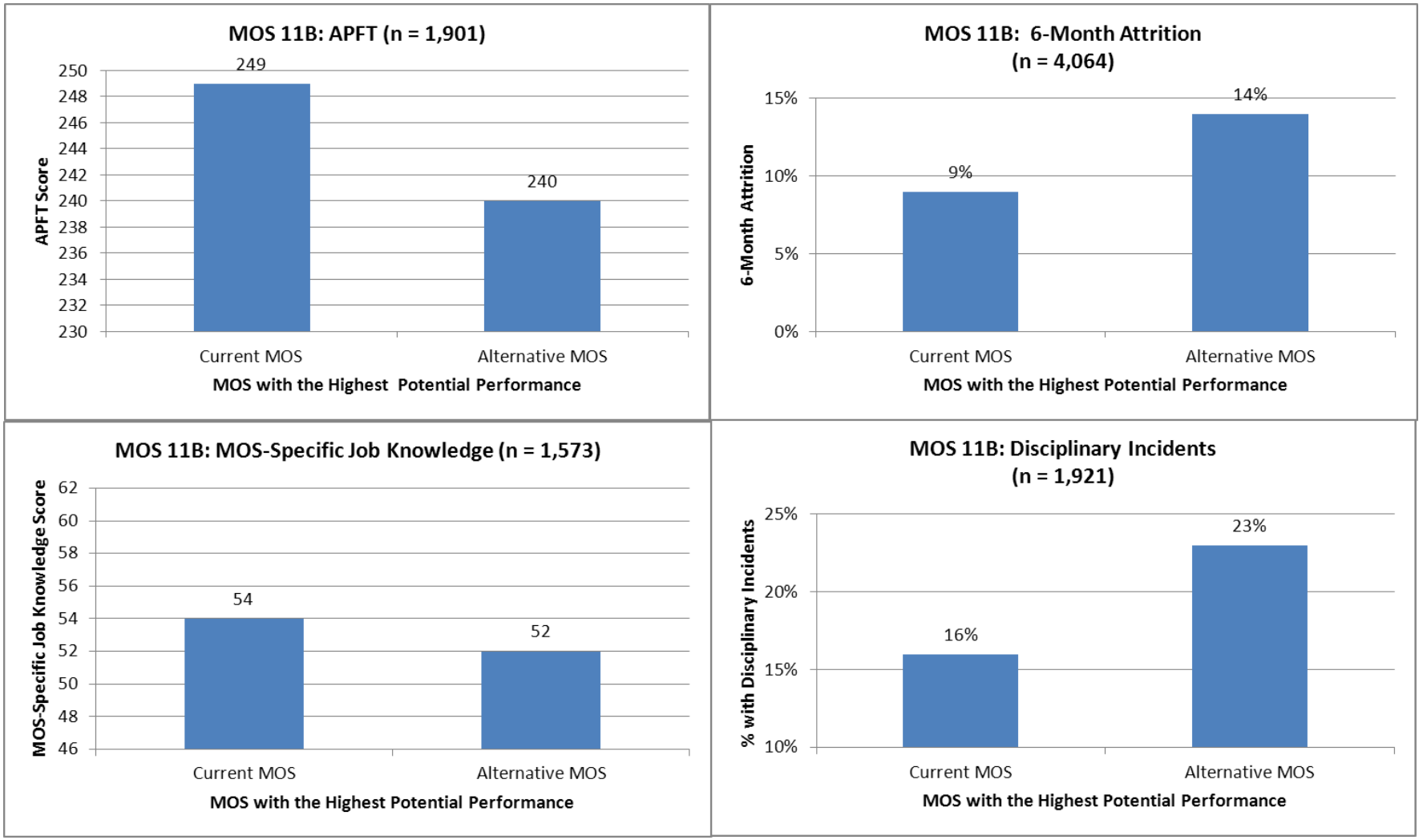

Figure 10. The Actual Performance of Infantry who were Predicted by TAPAS to Perform Best in their Current MOS (11B) Compared to those who were Predicted by TAPAS to Perform Better in an Alternative MOS

DISCUSSION

The Army is conducting an IOT&E of the TAPAS. As part of this effort, the TAPAS is being administered to nonprior service applicants testing at MEPS locations in the *Tier One Performance Screen (TOPS)* program. In addition, a number of performance, attitude, and attrition criteria have been measured as well. The bulk of the effort to this point has focused on validating the TAPAS as a selection tool and the results appear promising.

The goal of the current research effort was to examine TAPAS as an MOS qualification tool for the U.S. Army. In addition, we also provided a preliminary look at whether this assessment can be used to classify recruits into MOS. To be useful for these purposes, the TAPAS scales need to be valid predictors of Army criteria and must be able to predict that some individuals will be high performers in one or more MOS *but not in others*. Using the TOPS data, we examined these issues across the four-largest MOS in the dataset: 11B, 31B, 68W, and 88M.

In sum, TAPAS scores were useful predictors of can-do, will-do, and attrition outcomes. MOS-specific TAPAS composites were correlated with a number of important behaviors such as attrition, APFT scores, job knowledge scores, and disciplinary incidents. In addition, quintile plots showed the important practical implications of these relationships. For example, even though the Pearson correlations with attrition were attenuated due to the categorical nature of this variable, plots of these relationships showed that Soldiers in the bottom TAPAS quintile had attrition rates that were approximately 300% higher than Soldiers in the highest quintile. This reduction in attrition has the potential to substantially reduce the costs associated with maintaining a sufficient number of Army personnel.

Perhaps the most important finding of this research was that about 40% to 50% of the Soldiers were predicted to perform better in an MOS other than the one to which they were assigned. In fact, of those predicted to perform the worst in MOS 11B, over 50% were predicted to perform a full standard deviation better in a different MOS and over 80% were predicted to perform at least a half of a standard deviation better. Again, these analyses assumed that Soldiers would be classified into the MOS for which they had the highest potential for performance and, therefore, did not account for the practical limitations that are inherent in the classification process. Despite this limitation, this preliminary evidence indicates that using the TAPAS composites for classification has the potential to improve performance, lower attrition, and improve the overall fit of a Soldier with his or her MOS.

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APPENDIX A

CORRELATIONS BETWEEN THE ALQ AND PERFORMANCE RATING SUBSCALES AND THE TAPAS FACETS AND COMPOSITES

Table A1. Correlations Between the TAPAS Facet Scales and ALQ and Performance Rating Subscales in the Army-Wide Sample

	TAPAS Facets														
Criteria	Achievement	Adjustment	Cooperation	Dominance	Even-Tempered	Attention-Seeking	Selflessness	Intellectual Efficiency	Non-Delinquency	Order	Physical Conditioning	Self-Control	Sociability	Tolerance	Optimism
ALQ Scales															
ALQ Affective Commitment	**.14**	**-.03**	.01	**.11**	.01	**.06**	**.06**	-.01	**.05**	.00	.02	**.03**	**.04**	**.05**	**.07**
ALQ Normative Commitment	**.12**	.02	.00	**.08**	**.03**	**.04**	**.05**	**.05**	.02	**-.04**	**.03**	.01	-.02	**.04**	**.04**
ALQ Army Career Intentions	**.10**	-.01	.00	**.07**	**.04**	.01	**.05**	.01	.02	**.04**	**-.03**	**.04**	.00	**.06**	**.04**
ALQ Reenlistment Intentions	**.11**	-.01	.01	**.08**	**.06**	.00	**.06**	.02	.02	.02	-.02	**.04**	.00	**.06**	**.04**
ALQ Army-Civilian Comparison	-.02	**-.03**	.02	**-.05**	-.01	-.02	.01	**-.11**	.00	-.01	-.01	.01	.01	-.01	.01
ALQ Attrition Cognition	**-.14**	**-.03**	-.02	**-.10**	**-.05**	**-.05**	**-.05**	**-.05**	**-.03**	.02	**-.05**	-.02	-.01	**-.05**	**-.08**
ALQ Army Life Adjustment	**.15**	**.10**	-.01	**.15**	**.05**	**.06**	-.01	**.12**	.01	-.01	**.13**	.02	.02	.02	**.12**
ALQ MOS Fit	**.10**	**.04**	-.02	**.08**	.00	**.04**	.01	**.03**	.01	**-.05**	**.08**	-.02	**.06**	.01	**.06**
Performance Rating Scales															
Effort	**.10**	-.02	-.03	**.07**	.03	.04	-.04	.00	.01	.00	**.12**	.01	.01	.01	.05
Physical Fitness and Bearing	**.07**	-.01	-.03	**.06**	.01	.05	-.05	-.02	-.03	.00	**.16**	-.02	.02	-.02	.05
Personal Discipline	**.08**	-.02	**-.06**	.02	.01	-.01	-.05	-.01	.01	.02	.05	.01	-.02	-.03	**.06**
Commitment/Adjustment to the Army	**.07**	-.02	-.04	.04	.00	.02	**-.06**	-.01	.01	.00	**.09**	-.01	.00	-.01	**.07**
Support for Peers	.04	-.03	-.03	.03	.02	.05	**-.07**	-.02	.01	-.01	**.08**	-.03	.01	-.02	.04
Peer Leadership	**.08**	-.03	-.03	.03	.01	.01	-.04	.01	.01	.02	**.08**	-.01	.00	-.03	**.07**
Common Task Knowledge and Skill	.05	.01	-.02	.04	.02	.02	-.05	-.01	.01	-.01	**.09**	-.01	.01	-.02	**.07**
MOS Qualification and Skill	**.06**	-.04	-.03	.04	.00	-.01	-.04	.01	.00	.01	**.09**	.02	.00	-.02	.05
Overall Performance	**.09**	-.03	-.04	.04	.02	.02	.01	.03	-.01	.02	**.10**	.01	-.01	.03	**.06**

Note. Bold values are significant at the .05 level.

Table A2. Correlations Between the TAPAS Facet Scales and Each Criterion in MOS 11B

Criteria	TAPAS Facets: Achievement	Adjustment	Cooperation	Dominance	Even-Tempered	Attention-Seeking	Selflessness	Intellectual Efficiency	Non-Delinquency	Order	Physical Conditioning	Self-Control	Sociability	Tolerance	Optimism
ALQ Scales															
ALQ Affective Commitment	**.21**	-.04	-.02	**.12**	.00	**.08**	**.06**	**.05**	**.07**	-.03	**.08**	.03	**.05**	.04	**.10**
ALQ Normative Commitment	**.16**	.01	**-.05**	**.09**	.01	**.06**	.03	**.10**	.03	-.05	**.08**	.01	-.01	.02	**.07**
ALQ Army Career Intentions	**.14**	.01	-.02	**.08**	.05	.01	**.07**	.02	.03	.00	.02	.03	.01	.05	**.06**
ALQ Reenlistment Intentions	**.15**	.00	.00	**.10**	.07	.00	**.05**	.04	**.05**	-.01	.03	.04	.01	.04	**.07**
ALQ Army-Civilian Comparison	.04	-.03	.01	**-.05**	.00	-.02	.02	**-.06**	-.02	-.01	.00	.01	-.04	-.03	**.05**
ALQ Attrition Cognition	**-.19**	-.03	.02	**-.12**	-.05	**-.08**	-.01	**-.09**	-.04	.03	**-.10**	.00	-.04	-.03	**-.11**
ALQ Army Life Adjustment	**.20**	**.08**	-.03	**.18**	.05	**.07**	-.01	**.11**	.03	.02	**.18**	.01	.04	.02	**.12**
ALQ MOS Fit	**.15**	.00	**-.06**	**.10**	-.03	**.05**	.02	-.01	.02	-.01	**.15**	.00	**.06**	-.01	**.06**
Performance Rating Scales															
Effort	**.13**	.02	-.05	.07	.06	.06	-.03	.01	.05	-.04	**.14**	.00	.04	.01	**.10**
Physical Fitness and Bearing	**.10**	-.02	**-.08**	.07	.02	.03	-.02	-.05	.01	-.03	**.17**	-.04	.03	-.01	**.11**
Personal Discipline	**.10**	.01	**-.12**	.01	.02	.00	-.05	-.01	.02	-.07	.07	.00	-.03	-.03	.08
Commitment/Adjustment to the Army	**.09**	.00	-.05	.01	.02	.03	-.05	.00	.03	-.07	**.09**	-.05	.01	.04	**.11**
Support for Peers	.07	.03	-.04	.02	.06	.04	-.06	.01	.05	-.06	**.11**	-.04	.00	-.02	.06
Peer Leadership	**.08**	.00	-.07	-.01	.05	.00	.00	.01	.05	-.01	**.13**	-.04	-.03	.00	**.13**
Common Task Knowledge and Skill	.03	.00	-.05	-.02	.06	.02	-.04	-.02	.03	-.04	**.11**	-.04	.00	.00	**.10**
MOS Qualification and Skill	.07	-.02	-.07	-.02	.01	-.01	-.03	-.02	.02	-.05	**.13**	.00	.01	.00	**.11**
Overall Performance	**.10**	-.03	-.06	-.01	.05	.01	.04	.02	.06	-.03	**.11**	-.01	-.02	.04	.08
MOS-Specific Performance	.05	.01	-.02	-.04	.06	-.03	-.05	.01	-.02	-.06	**.08**	-.03	.04	-.02	.08

Note. Bold values are significant at the .05 level.

Table A3. Significant Correlations Between the Criterion Measures and the Predicted Scores on the TAPAS Composites in MOS 11B

Criteria	Predicted Scores on 11B Composites: Can-Do TAPAS Composite	Will-Do TAPAS Composite	Attrition TAPAS Composite
ALQ Scales		.37	-.23
ALQ Affective Commitment		.18	-.10
ALQ Normative Commitment	.10	.16	-.09
ALQ Army Career Intentions		.10	
ALQ Reenlistment Intentions		.11	
ALQ Army/Civilian Comparison			
ALQ Attrition Cognition	-.09	-.19	.12
ALQ Army Life Adjustment	.08	.25	-.16
ALQ MOS Fit		.21	-.14
Performance Rating Scales			
Effort		.18	-.17
Physical Fitness and Bearing		.20	-.18
Personal Discipline		.11	-.09
Commitment/Adjustment to the Army		.13	-.12
Support for Peers		.12	-.14
Peer Leadership		.16	-.14
Common Task Knowledge and Skill		.11	-.12
MOS Qualification and Skill		.15	-.14
Overall Performance		.14	-.13
MOS-Specific Performance		.10	

Table A4. Correlations Between the TAPAS Facet Scales and Each Criterion in MOS 31B

Criteria	TAPAS Facets: Achievement	Adjustment	Cooperation	Dominance	Even-Tempered	Attention-Seeking	Selflessness	Intellectual Efficiency	Non-Delinquency	Order	Physical Conditioning	Self-Control	Sociability	Tolerance	Optimism
ALQ Scales															
ALQ Affective Commitment	**.18**	.00	-.01	**.14**	.05	.03	.05	-.03	-.01	.04	.05	**.09**	**.07**	**.07**	**.07**
ALQ Normative Commitment	**.18**	.04	.00	**.11**	**.09**	**.07**	**.09**	.02	.03	-.01	-.02	.00	.01	.04	**.08**
ALQ Army Career Intentions	**.12**	-.03	-.03	.06	.05	.03	.04	.01	-.04	**.13**	-.06	.07	.01	**.09**	.02
ALQ Reenlistment Intentions	**.12**	-.02	.02	**.08**	**.08**	.05	.05	.00	-.03	**.10**	-.04	.03	.03	.06	.02
ALQ Army-Civilian Comparison	-.03	-.04	-.01	-.02	.00	-.04	.04	-.06	-.02	.02	-.01	.00	.03	.05	-.03
ALQ Attrition Cognition	**-.18**	-.05	-.02	**-.09**	**-.0**9	-.05	-.07	-.02	-.06	-.01	-.04	-.01	-.02	-.03	**-.08**
ALQ Army Life Adjustment	**.14**	**.07**	.00	**.17**	.01	.05	.00	.04	.00	.05	**.11**	.03	.03	-.02	**.13**
ALQ MOS Fit	**.11**	.03	.00	**.13**	.05	.00	.01	-.06	.02	-.02	.05	.03	.02	.01	**.10**
Performance Rating Scales															
Effort	.10	-.06	-.05	.08	.09	.02	-.07	-.01	-.06	.02	.10	.08	-.05	.01	.05
Physical Fitness and Bearing	.03	.04	-.06	.04	.05	.10	-.10	.02	**-.13**	-.03	**.13**	.04	.01	-.04	.08
Personal Discipline	.06	-.03	-.06	.03	.08	-.03	-.05	.01	-.04	.02	-.02	.02	-.05	-.04	.09
Commitment/Adjustment to the Army	.06	-.04	-.05	.04	.06	.01	-.05	-.01	-.04	.00	.01	.00	-.04	-.04	.09
Support for Peers	-.02	**-.13**	-.07	.04	.06	.08	-.05	-.04	-.03	-.01	-.05	-.02	-.02	.00	.07
Peer Leadership	.10	**-.13**	-.03	.08	.04	.05	-.09	.03	-.06	.04	-.03	.01	.01	-.08	.09
Common Task Knowledge and Skill	.07	-.02	-.04	.10	.05	-.01	-.07	.00	.00	-.04	-.02	-.04	.02	-.02	**.12**
MOS Qualification and Skill	**.11**	-.05	-.04	**.12**	.04	-.05	-.02	.06	-.03	.00	.00	.03	-.04	.00	.06
Overall Performance	.09	-.02	-.03	.07	.05	**.12**	**-.12**	.01	**-.12**	.04	.09	.04	.01	-.03	**.12**
MOS-Specific Performance	-.04	-.06	-.04	.05	.05	.00	-.07	-.01	-.06	-.11	-.04	-.03	.00	-.06	.08

Note. Bold values are significant at the .05 level.

Table A5. Significant Correlations Between the Criterion Measures and the Predicted Scores on the TAPAS Composites in MOS 31B

	Predicted Scores on 31B Composites		
Criteria	Can-Do TAPAS Composite	Will-Do TAPAS Composite	Attrition TAPAS Composite
ALQ Scales			
ALQ Affective Commitment	-.08	.11	.09
ALQ Normative Commitment		.11	.08
ALQ Army Career Intentions			.11
ALQ Reenlistment Intentions			.11
ALQ Army Civilian Comparison	-.08		
ALQ Attrition Cognition		-.13	
ALQ Army Life Adjustment		.21	
ALQ MOS Fit		.14	
Performance Rating Scales			
Effort		.11	
Physical Fitness and Bearing		.13	
Personal Discipline			
Commitment/Adjustment to the Army			
Support for Peers			
Peer Leadership			
Common Task Knowledge and Skill			
MOS Qualification and Skill			
Overall Performance		.14	
MOS-Specific Performance			

Table A6. Correlations Between the TAPAS Facet Scales and Each Criterion in MOS 68W

Criteria	TAPAS Facets: Achievement	Adjustment	Cooperation	Dominance	Even-Tempered	Attention-Seeking	Selflessness	Intellectual Efficiency	Non-Delinquency	Order	Physical Conditioning	Self-Control	Sociability	Tolerance	Optimism
ALQ Scales															
ALQ Affective Commitment	**.10**	-.03	.06	**.09**	.02	.06	.05	-.02	.05	.02	-.06	-.03	.03	.04	.04
ALQ Normative Commitment	**.06**	.00	.06	.03	.05	-.03	.05	.03	-.01	-.05	-.01	-.03	-.06	.01	-.04
ALQ Army Career Intentions	**.08**	.01	.03	**.09**	.05	.00	-.03	.02	.05	.01	**-.07**	-.01	.02	.04	.01
ALQ Reenlistment Intentions	**.07**	.01	**.07**	**.08**	.05	-.02	.01	.01	.06	-.01	-.06	.01	-.01	.05	-.01
ALQ Army-Civilian Comparison	-.05	.00	**.09**	-.06	.01	.02	-.02	**-.10**	.01	-.04	-.05	-.03	.01	-.03	-.03
ALQ Attrition Cognition	**-.08**	-.02	**-.08**	-.05	**-.08**	.01	-.05	-.04	-.02	.04	.00	-.03	.01	-.04	-.03
ALQ Army Life Adjustment	**.12**	**.13**	.04	**.10**	.06	.04	-.02	**.15**	.01	-.09	.06	-.02	-.01	.03	**.12**
ALQ MOS Fit	**.09**	.02	.02	**.09**	.02	.03	.06	.05	-.02	-.01	.00	**-.08**	**.11**	.05	.05
Performance Rating Scales															
Effort	.07	-.05	.02	.06	-.02	.04	-.05	-.04	.02	.09	**.10**	-.01	.06	.00	.03
Physical Fitness and Bearing	.05	-.04	.07	.04	-.02	.01	-.05	-.04	.01	.05	**.14**	-.06	.09	-.03	-.02
Personal Discipline	.04	-.05	.03	-.03	-.04	-.05	-.03	.01	.04	**.14**	.03	.01	.00	-.06	.00
Commitment/Adjustment to the Army	.06	-.04	-.01	.03	-.07	-.01	-.05	.00	.07	.09	**.12**	.03	.00	-.04	.00
Support for Peers	.08	-.02	.02	.05	-.02	.05	-.07	-.01	-.01	.06	**.10**	-.02	.07	-.04	.00
Peer Leadership	**.11**	.06	.07	.05	-.03	.03	-.05	.04	.04	.07	**.13**	.03	.08	-.03	.02
Common Task Knowledge and Skill	.06	.07	.09	.09	-.03	.02	-.04	.03	.08	.04	.08	.04	.06	-.05	-.01
MOS Qualification and Skill	.06	.00	.07	.05	-.01	-.02	-.02	.02	.08	**.11**	.04	.08	.04	-.06	-.03
Overall Performance	.08	-.02	.01	.01	-.04	-.06	.07	.06	-.01	.05	**.12**	-.01	.02	-.06	.03
MOS-Specific Performance	.07	-.02	.03	-.06	-.02	-.05	.02	-.05	.16	.07	.06	.08	-.03	.03	.01

Note. Bold values are significant at the .05 level.

Table A7. Significant Correlations Between the Criterion Measures and the Predicted Scores on the TAPAS Composites in MOS 68W

	Predicted Scores on 68W Composites		
Criteria	Can-Do TAPAS Composite	Will-Do TAPAS Composite	Attrition TAPAS Composite
ALQ Scales			
ALQ Affective Commitment	.34		-.12
ALQ Normative Commitment			
ALQ Army Career Intentions	.07		
ALQ Reenlistment Intentions			
ALQ Army Civilian Comparison			
ALQ Attrition Cognition	-.07		
ALQ Army Life Adjustment			
ALQ MOS Fit	.15		-.12
Performance Rating Scales			
Effort		.11	
Physical Fitness and Bearing		.14	
Personal Discipline			
Commitment/Adjustment to the Army		.13	
Support for Peers		.12	
Peer Leadership		.15	
Common Task Knowledge and Skill			
MOS Qualification and Skill			
Overall Performance		.14	
MOS-Specific Performance			

Table A8. Correlations Between the TAPAS Facet Scales and Each Criterion in MOS 88M

Criteria	TAPAS Facets														
	Achievement	Adjustment	Cooperation	Dominance	Even-Tempered	Attention-Seeking	Selflessness	Intellectual Efficiency	Non-Delinquency	Order	Physical Conditioning	Self-Control	Sociability	Tolerance	Optimism
ALQ Scales	.07	.07	.02	**.15**	.03	.06	**-.14**	-.01	**.08**	-.05	**.16**	.07	.01	**.12**	**.09**
ALQ Affective Commitment	.05	-.05	**.08**	**.10**	.05	.01	**.08**	**-.08**	.07	-.01	-.06	**.09**	.02	**.11**	.03
ALQ Normative Commitment	.06	.04	.05	**.08**	.07	.04	.07	-.06	.04	-.03	-.04	.06	-.01	**.09**	.02
ALQ Army Career Intentions	.04	-.02	.00	**.10**	.04	-.02	**.11**	-.02	.03	.07	-.04	**.09**	-.01	**.11**	.03
ALQ Reenlistment Intentions	.03	-.04	-.03	.07	.05	-.07	**.11**	-.01	-.02	.05	-.05	**.12**	-.02	**.11**	.01
ALQ Army-Civilian Comparison	.00	-.01	.05	-.02	-.02	.03	.02	**-.12**	**.08**	-.02	.00	.07	.04	.06	.01
ALQ Attrition Cognition	-.09	-.03	-.05	**-.11**	-.03	-.02	**-.09**	-.01	.01	-.02	.01	-.07	.01	**-.11**	-.06
ALQ Army Life Adjustment	.02	**.13**	.02	**.12**	**.10**	.04	.05	**.10**	.02	-.01	**.08**	.07	.00	.04	**.08**
ALQ MOS Fit	-.02	.06	.04	**-.10**	-.01	**-.09**	-.01	**-.09**	**.08**	-.01	-.04	-.01	-.03	-.03	.03
Performance Rating Scales															
Effort	.08	-.07	-.03	-.05	.04	-.04	.04	.00	.01	-.15	.11	-.06	-.03	**.20**	-.04
Physical Fitness and Bearing	.01	-.07	.07	.00	.02	.04	.05	-.03	.01	-.01	.06	-.06	.06	.14	.03
Personal Discipline	.10	-.01	.01	-.03	-.04	.01	.02	-.04	.12	-.03	.11	.04	.13	.16	.06
Commitment/Adjustment to the Army	.09	-.03	.08	-.03	-.04	-.03	-.01	-.05	.08	-.06	.04	-.07	**.20**	.14	.12
Support for Peers	.01	-.11	-.02	-.09	-.10	.01	-.08	-.06	.08	.00	.07	-.05	.04	.09	.03
Peer Leadership	-.01	-.15	-.03	-.12	-.10	.07	.10	-.11	-.04	-.04	.03	-.10	**.20**	.12	.01
Common Task Knowledge and Skill	.03	-.03	.00	-.01	.03	.08	.13	-.07	-.07	.00	.11	.01	.15	**.20**	.04
MOS Qualification and Skill	.03	-.06	.05	-.02	.04	-.03	.04	-.09	-.02	.02	.16	.03	.13	**.19**	.01
Overall Performance	.07	-.10	-.09	.05	-.06	-.06	.07	.00	-.02	.00	.07	-.02	.01	**.28**	-.02
MOS-Specific Performance	-.02	-.04	.03	.06	-.09	.03	-.09	-.06	-.01	-.01	.03	.06	.02	**.22**	.08

Note. Bold values are significant at the .05 level.

Table A9. Significant Correlations Between the Criterion Measures and the Predicted Scores on the TAPAS Composites in MOS 88M

	Predicted Scores on 88M Composites		
Criteria	Can-Do TAPAS Composite	Will-Do TAPAS Composite	Attrition TAPAS Composite
ALQ Scales			
ALQ Affective Commitment	-.11		.09
ALQ Normative Commitment			
ALQ Army Career Intentions	-.08		.09
ALQ Reenlistment Intentions			
ALQ Army Civilian Comparison	-.13		
ALQ Attrition Cognition			
ALQ Army Life Adjustment			
ALQ MOS Fit			
Performance Rating Scales			
Effort			-.20
Physical Fitness and Bearing			
Personal Discipline			
Commitment/Adjustment to the Army			
Support for Peers			
Peer Leadership			
Common Task Knowledge and Skill			
MOS Qualification and Skill	.19		
Overall Performance			
MOS-Specific Performance		.22	